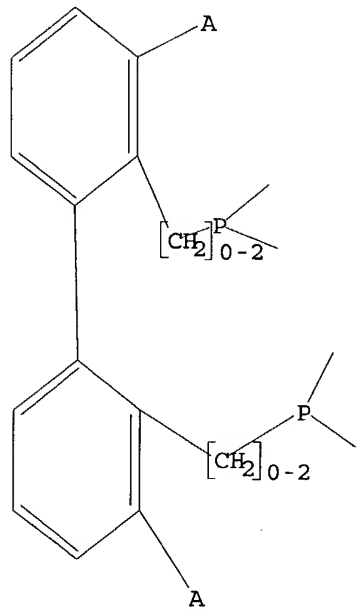
```
=> d
L1 HAS NO ANSWERS
L1                STR
```




```
G1 O,N,S

Structure attributes must be viewed using STN Express query preparation.


=> s m/els
L2     3551569 M/ELS

=> s l1 subset=l2
ENTER SUBSET SEARCH SCOPE - SAMPLE, FULL, RANGE, OR (END):sam
SAMPLE SUBSET SEARCH INITIATED 17:07:15 FILE 'REGISTRY'
SAMPLE SUBSET SCREEN SEARCH COMPLETED -     23 TO ITERATE

100.0% PROCESSED      23 ITERATIONS                              0 ANSWERS
SEARCH TIME: 00.00.01

PROJECTIONS (WITHIN SPECIFIED SUBSET):           ONLINE  **COMPLETE**
PROJECTED ITERATIONS (WITHIN SPECIFIED SUBSET):          173 TO      747
PROJECTED ANSWERS (WITHIN SPECIFIED SUBSET):               0 TO        0

L3             0 SEA SUB=L2 SSS SAM L1

=> s l1 subset=l2 full
FULL SUBSET SEARCH INITIATED 17:07:22 FILE 'REGISTRY'
FULL SUBSET SCREEN SEARCH COMPLETED -    531 TO ITERATE

100.0% PROCESSED     531 ITERATIONS                             0 ANSWERS
SEARCH TIME: 00.00.01

L4             0 SEA SUB=L2 SSS FUL L1

=> s l1
SAMPLE SEARCH INITIATED 17:07:31 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -    156 TO ITERATE

100.0% PROCESSED     156 ITERATIONS                             2 ANSWERS
```

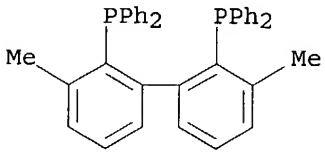
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 2371 TO 3869
PROJECTED ANSWERS: 2 TO 124

L5 2 SEA SSS SAM L1

=> d scan

L5 2 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, (3,3'-dimethyl[1,1'-biphenyl]-2,2'-diyl)bis[diphenyl-, (R)-(9CI)
MF C38 H32 P2



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):0

=> s l5
SAMPLE SEARCH INITIATED 17:08:04 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 156 TO ITERATE

100.0% PROCESSED 156 ITERATIONS 2 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 2371 TO 3869
PROJECTED ANSWERS: 2 TO 124

L6 2 SEA SSS SAM L1

=> d his

(FILE 'HOME' ENTERED AT 17:03:30 ON 04 MAR 2004)

FILE 'CAPLUS' ENTERED AT 17:03:37 ON 04 MAR 2004

FILE 'REGISTRY' ENTERED AT 17:06:45 ON 04 MAR 2004
L1 STRUCTURE UPLOADED
L2 3551569 S M/ELS
L3 0 S L1 SUB=L2 SAM
L4 0 S L1 FULL SUB=L2
L5 2 S L1
L6 2 S L5

=> s l1 full
FULL SEARCH INITIATED 17:09:09 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 2968 TO ITERATE

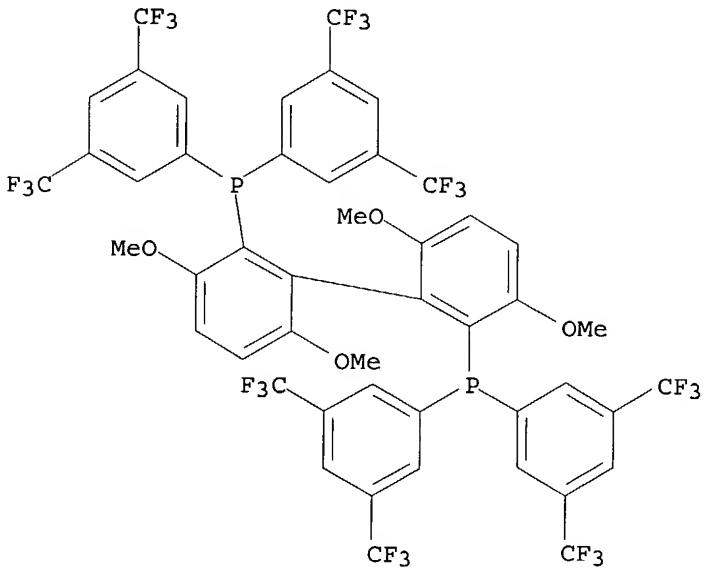
100.0% PROCESSED 2968 ITERATIONS 26 ANSWERS

SEARCH TIME: 00.00.01

L7 26 SEA SSS FUL L1

=> d scan

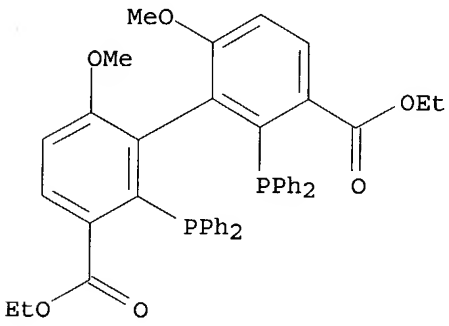
L7 26 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, [(1R)-3,3',6,6'-tetramethoxy[1,1'-biphenyl]-2,2'-diyl]bis[bis[3,5-bis(trifluoromethyl)phenyl]- (9CI)
MF C48 H28 F24 O4 P2



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

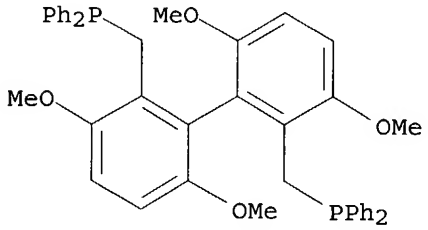
HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):9

L7 26 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN [1,1'-Biphenyl]-3,3'-dicarboxylic acid, 2,2'-bis(diphenylphosphino)-6,6'-dimethoxy-, diethyl ester, (1R)- (9CI)
MF C44 H40 O6 P2



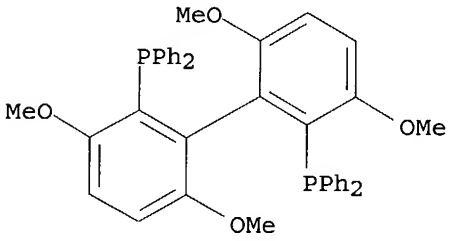
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L7 26 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, [[(1R)-3,3',6,6'-tetramethoxy[1,1'-biphenyl]-2,2'-diyl]bis(methylene)]bis[diphenyl- (9CI)
MF C42 H40 O4 P2



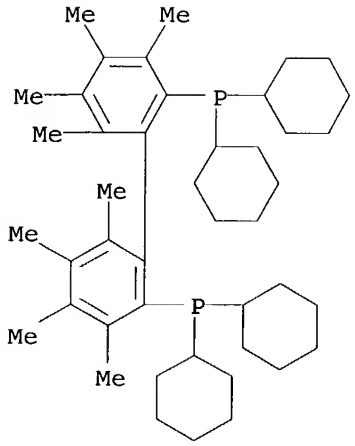
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L7 26 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, [(1R)-3,3',6,6'-tetramethoxy[1,1'-biphenyl]-2,2'-diyl]bis[diphenyl- (9CI)
MF C40 H36 O4 P2



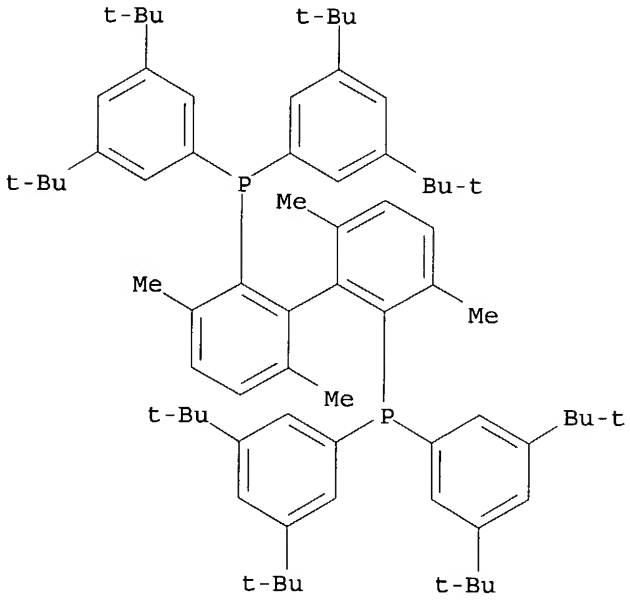
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L7 26 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, (3,3',4,4',5,5',6,6'-octamethyl[1,1'-biphenyl]-2,2'-diyl)bis[dicyclohexyl- (9CI)
MF C44 H68 P2



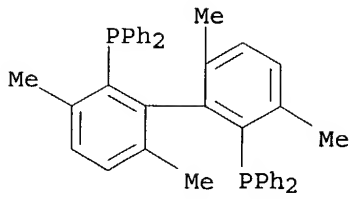
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L7 26 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, [(1R)-3,3',6,6'-tetramethyl[1,1'-biphenyl]-2,2'-diyl]bis[bis[3,5-bis(1,1-dimethylethyl)phenyl]- (9CI)
MF C72 H100 P2



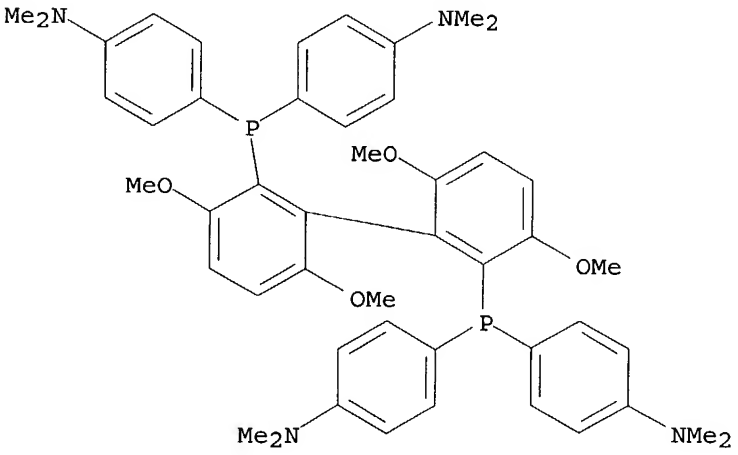
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L7 26 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, (3,3',6,6'-tetramethyl[1,1'-biphenyl]-2,2'-diyl)bis[diphenyl-(9CI)
MF C40 H36 P2



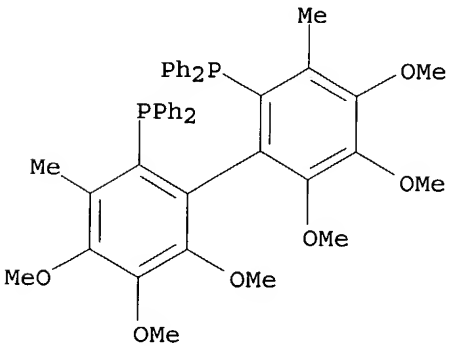
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

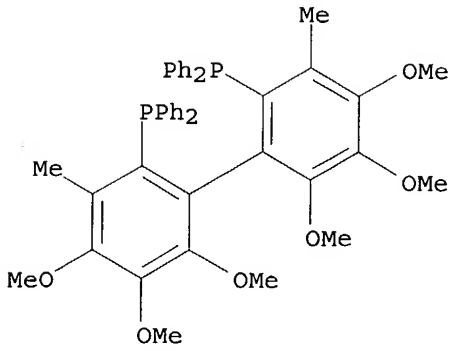
L7 26 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Benzenamine, 4,4',4'',4'''-[[(1R)-3,3',6,6'-tetramethoxy[1,1'-biphenyl]-2,2'-diyl]diphosphinidyne]tetrakis[N,N-dimethyl- (9CI)
MF C48 H56 N4 O4 P2



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

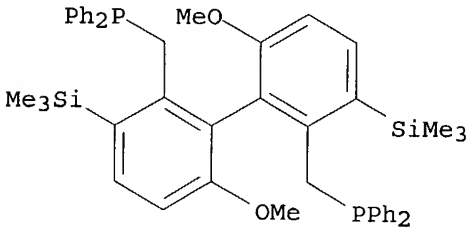
L7 26 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, [(1R)-4,4',5,5',6,6'-hexamethoxy-3,3'-dimethyl[1,1'-biphenyl]-2,2'-diyl]bis[diphenyl- (9CI)
MF C44 H44 O6 P2





PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L7 26 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, [[(1R)-6,6'-dimethoxy-3,3'-bis(trimethylsilyl)[1,1'-biphenyl]-2,2'-diyl]bis(methylene)]bis[diphenyl- (9CI)
MF C46 H52 O2 P2 Si2



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):0

=> file caplus

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	316.53	318.93

FILE 'CAPLUS' ENTERED AT 17:09:32 ON 04 MAR 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE COVERS 1907 - 4 Mar 2004 VOL 140 ISS 10
FILE LAST UPDATED: 3 Mar 2004 (20040303/ED)

  This file contains CAS Registry Numbers for easy and accurate
  substance identification.

=> file caplus
COST IN U.S. DOLLARS   SINCE FILE ENTRY TOTAL SESSION
FULL ESTIMATED COST   0.44   319.37

FILE 'CAPLUS' ENTERED AT 17:09:59 ON 04 MAR 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE COVERS 1907 - 4 Mar 2004 VOL 140 ISS 10
FILE LAST UPDATED: 3 Mar 2004 (20040303/ED)

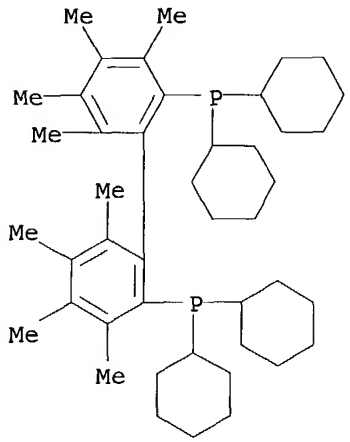
  This file contains CAS Registry Numbers for easy and accurate
  substance identification.

=> s l7
L8   4 L7

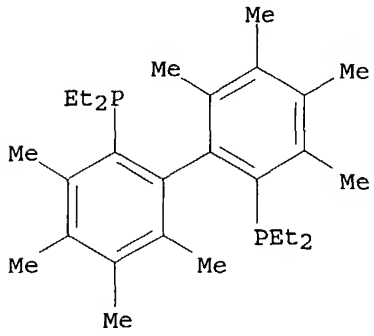
=> d ibib abs hitstr 1-4

L8   ANSWER 1 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:216177 CAPLUS
DOCUMENT NUMBER: 139:214664
TITLE: Preparation of an optically active
                          bis(diethylphosphino)biphenyl ligand designed for
                          highly reactive catalytic processes
AUTHOR(S):   Shibata, Tomomi; Tsuruta, Hideyuki; Danjo, Hiroshi;
                          Imamoto, Tsuneo
CORPORATE SOURCE: Faculty of Science, Department of Chemistry, Chiba
                          University, Inage-ku, Chiba, 263-8522, Japan
SOURCE: Journal of Molecular Catalysis A: Chemical (2003),
                          196(1-2), 117-124
                          CODEN: JMCCF2; ISSN: 1381-1169
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S):   CASREACT 139:214664
AB   New optically active diphosphine ligands, (S)-2,2'-bis(diphenylphosphino)-
     3,3',4,4',5,5',6,6'-octamethylbiphenyl and (S)-2,2'-bis(diethylphosphino)-
     3,3',4,4',5,5',6,6'-octamethylbiphenyl (2c) were prepd. via optical
     resoln. of the corresponding phosphine oxides. The Rh complex of 2c
     proved efficient in the catalytic asym. hydrogenation of a dehydroamino
     acid deriv. even at -50 .degree.C and gave 88% e.e. of hydrogenation
     product quant.

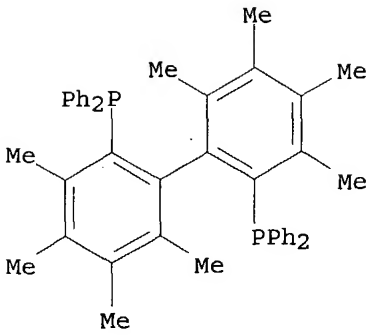
IT **586410-79-9P 590383-54-3P**
RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(prepn. of optically-active biphenyl phosphine ligand for rhodium-catalyzed hydrogenation of acetamidocinnamate)
RN 586410-79-9 CAPLUS
CN Phosphine, (3,3',4,4',5,5',6,6'-octamethyl[1,1'-biphenyl]-2,2'-diyl)bis[dicyclohexyl- (9CI) (CA INDEX NAME)



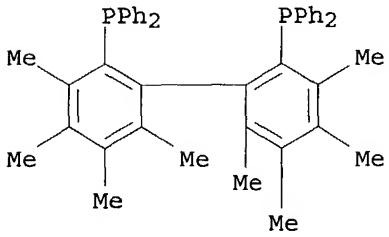
RN 590383-54-3 CAPLUS
CN Phosphine, [(1S)-3,3',4,4',5,5',6,6'-octamethyl[1,1'-biphenyl]-2,2'-diyl]bis[diethyl- (9CI) (CA INDEX NAME)



IT **590383-52-1P**
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(prepn. of optically-active biphenyl phosphine ligand for rhodium-catalyzed hydrogenation of acetamidocinnamate)
RN 590383-52-1 CAPLUS
CN Phosphine, [(1S)-3,3',4,4',5,5',6,6'-octamethyl[1,1'-biphenyl]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



IT **586410-77-7P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of optically-active biphenyl phosphine ligand for rhodium-catalyzed hydrogenation of acetamidocinnamate)
RN 586410-77-7 CAPLUS
CN Phosphine, (3,3',4,4',5,5',6,6'-octamethyl[1,1'-biphenyl]-2,2'-diyl)bis[diphenyl- (9CI) (CA INDEX NAME)



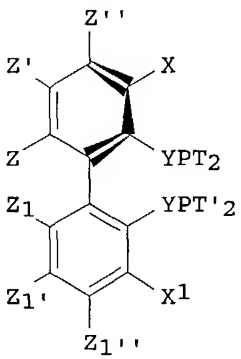
REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:391724 CAPLUS
DOCUMENT NUMBER: 136:401880
TITLE: Ortho substituted chiral phosphines and phosphinites and their use in asymmetric catalytic reactions
INVENTOR(S): Zhang, Xumu
PATENT ASSIGNEE(S): The Penn State Research Foundation, USA
SOURCE: PCT Int. Appl., 122 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002040491	A1	20020523	WO 2001-US43779	20011116

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2002016719 A5 20020527 AU 2002-16719 20011116
US 2002128501 A1 20020912 US 2001-991261 20011116
US 6653485 B2 20031125
EP 1341797 A1 20030910 EP 2001-996543 20011116
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
PRIORITY APPLN. INFO.: US 2000-249537P P 20001117
US 2001-301221P P 20010627
WO 2001-US43779 W 20011116
OTHER SOURCE(S): CASREACT 136:401880; MARPAT 136:401880
GI

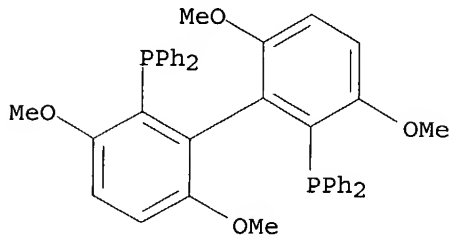


I

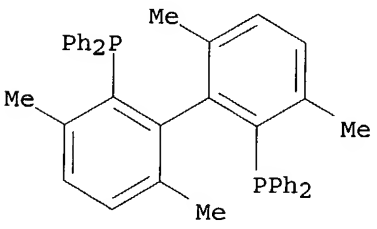
AB 3,3'-Substituted chiral biaryl phosphine and phosphinite ligands, I (X, X' = independently (un)substituted alkyl, (un)substituted aryl, alkoxy, organothio, diorganoamido, alkoxycarbonyl, halo, organosilyl, diorganophosphonyl, dialkoxyphosphino; Z, Z1 = independently (un)substituted alkyl, (un)substituted aryl, alkoxy, organothio, diorganoamido, alkoxycarbonyl, halo, organosilyl, diorganophosphonyl, dialkoxyphosphino, bridging group, etc.; Z', Z'', Z1', Z1'' = independently H, (un)substituted alkyl, (un)substituted aryl, alkoxy, organothio, diorganoamido, alkoxycarbonyl, halo, organosilyl, diorganophosphonyl, dialkoxyphosphino, bridging group, etc.; Y, Y' = O, CH2, NH, S, a bond between carbon and phosphorus, etc.; T, T' = (un)substituted alkyl, (un)substituted aryl, alkoxy, etc.) and metal complexes based on such chiral ligands useful in asym. catalysis are disclosed. The metal complexes are useful as catalysts in asym. reactions, such as, hydrogenation, hydride transfer, allylic alkylation, hydrosilylation, hydroboration, hydrovinylation, hydroformylation, hydroformylation, olefin metathesis, hydrocarboxylation, isomerization, cyclopropanation, Diels-Alder reaction, Heck reaction, isomerization, Aldol reaction, Michael addn., epoxidn., Kinetic resoln. and [m + n] cycloaddn. The metal complexes are particularly effective in Ru-catalyzed asym. hydrogenation of beta-ketoesters to beta-hydroxyesters and Ru-catalyzed asym. hydrogenation of enamides to beta amino acids. Thus, (R)-3,3'-diphenyl-2,2'-bis(diphenylphosphinoxy)-1,1'-binaphthyl was prepd. in five steps starting from (R)-BINOL.
IT **428874-77-5P 428875-68-7P 428875-69-8P**
428875-72-3P 428875-74-5P 428875-75-6P
428875-76-7P 428875-77-8P 428875-78-9P
428875-79-0P 428875-80-3P 428875-81-4P
428875-82-5P 428875-83-6P 428875-84-7P
428876-03-3P 428876-04-4P 428876-05-5P

428876-06-6P 428876-07-7P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(prepn. of ortho substituted chiral phosphines and phosphinites and their use in asym. catalytic reactions)

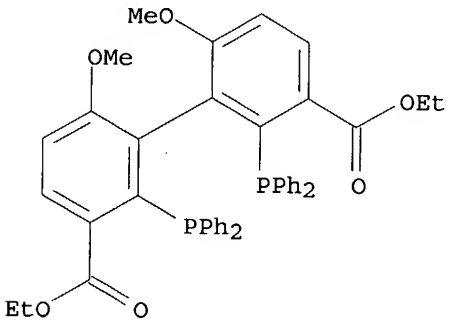
RN 428874-77-5 CAPLUS
CN Phosphine, [(1S)-3,3',6,6'-tetramethoxy[1,1'-biphenyl]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



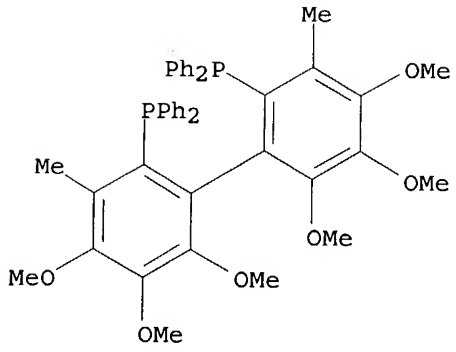
RN 428875-68-7 CAPLUS
CN Phosphine, [(1R)-3,3',6,6'-tetramethyl[1,1'-biphenyl]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



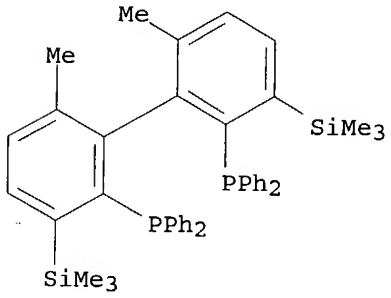
RN 428875-69-8 CAPLUS
CN [1,1'-Biphenyl]-3,3'-dicarboxylic acid, 2,2'-bis(diphenylphosphino)-6,6'-dimethoxy-, diethyl ester, (1R)- (9CI) (CA INDEX NAME)



RN 428875-72-3 CAPLUS
CN Phosphine, [(1R)-4,4',5,5',6,6'-hexamethoxy-3,3'-dimethyl[1,1'-biphenyl]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



RN 428875-74-5 CAPLUS
CN Phosphine, [(1R)-6,6'-dimethyl-3,3'-bis(trimethylsilyl)[1,1'-biphenyl]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



RN 428875-75-6 CAPLUS
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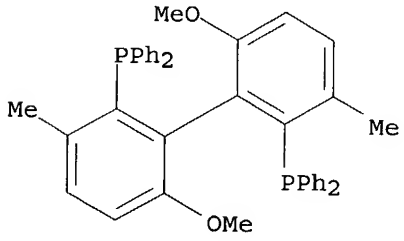
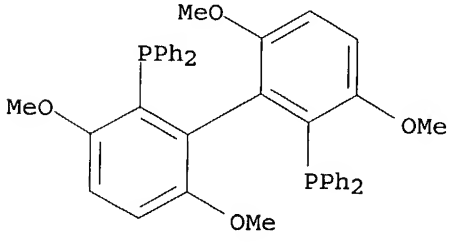
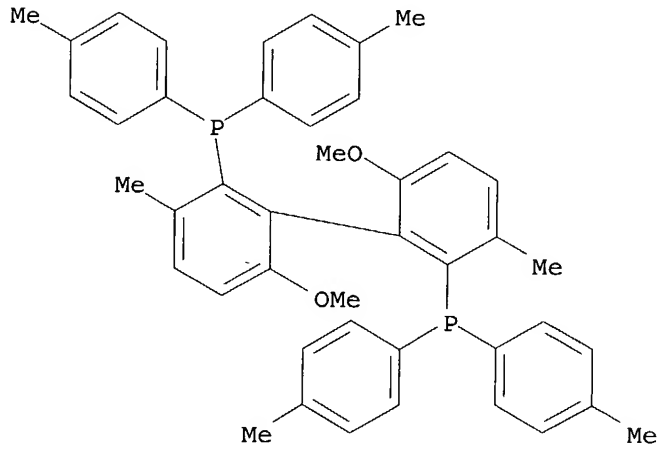


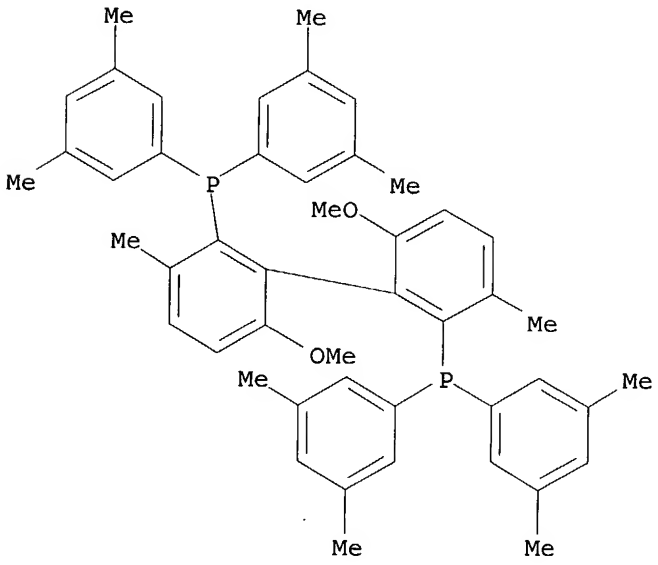
RN 428875-76-7 CAPLUS
CN Phosphine, [(1R)-3,3',6,6'-tetramethoxy[1,1'-biphenyl]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



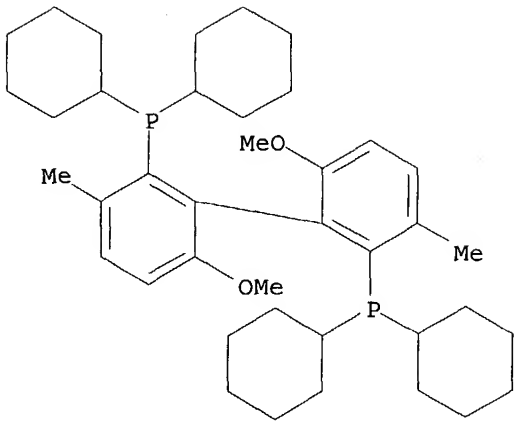
RN 428875-77-8 CAPLUS
CN Phosphine, [(1R)-6,6'-dimethoxy-3,3'-dimethyl[1,1'-biphenyl]-2,2'-diyl]bis[bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



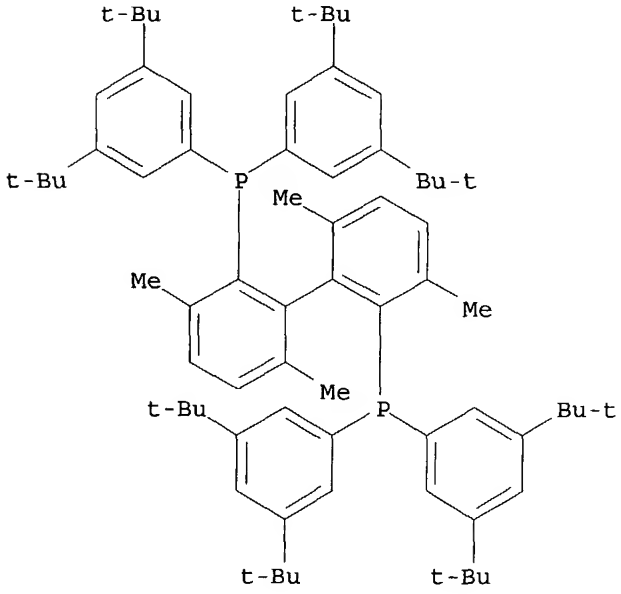
RN 428875-78-9 CAPLUS
CN Phosphine, [(1R)-6,6'-dimethoxy-3,3'-dimethyl[1,1'-biphenyl]-2,2'-diyl]bis[bis(3,5-dimethylphenyl)- (9CI) (CA INDEX NAME)



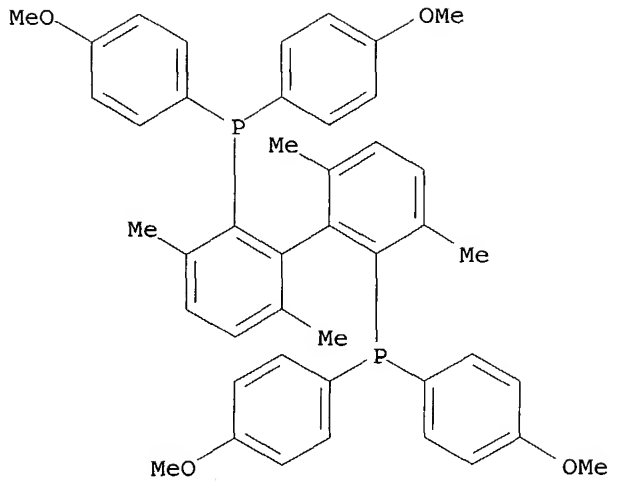
RN 428875-79-0 CAPLUS
CN Phosphine, [(1R)-6,6'-dimethoxy-3,3'-dimethyl[1,1'-biphenyl]-2,2'-diyl]bis[dicyclohexyl- (9CI) (CA INDEX NAME)



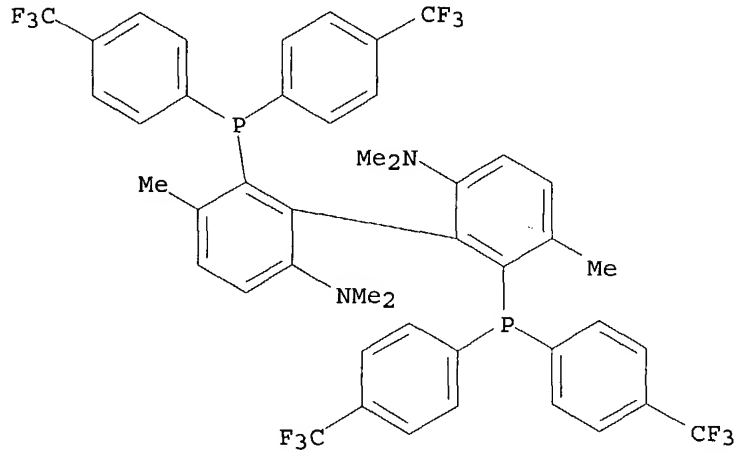
RN 428875-80-3 CAPLUS
CN Phosphine, [(1R)-3,3',6,6'-tetramethyl[1,1'-biphenyl]-2,2'-diyl]bis[bis[3,5-bis(1,1-dimethylethyl)phenyl]- (9CI) (CA INDEX NAME)



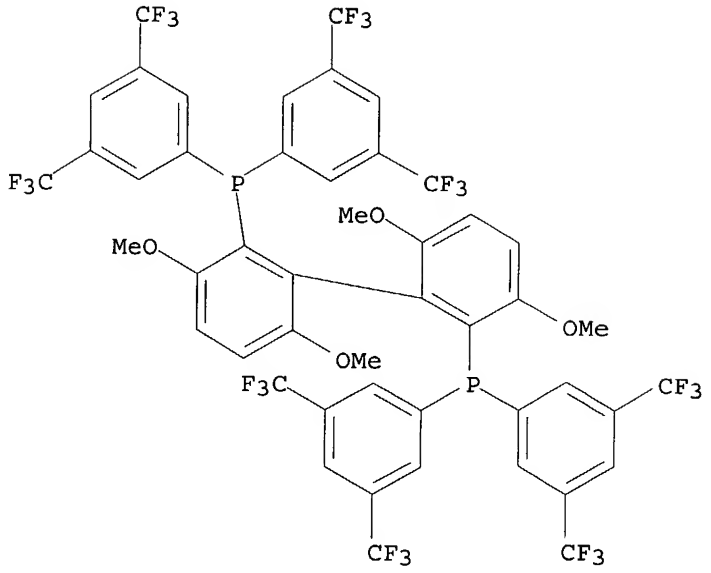
RN 428875-81-4 CAPLUS
CN Phosphine, [(1R)-3,3',6,6'-tetramethyl[1,1'-biphenyl]-2,2'-diyl]bis[bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



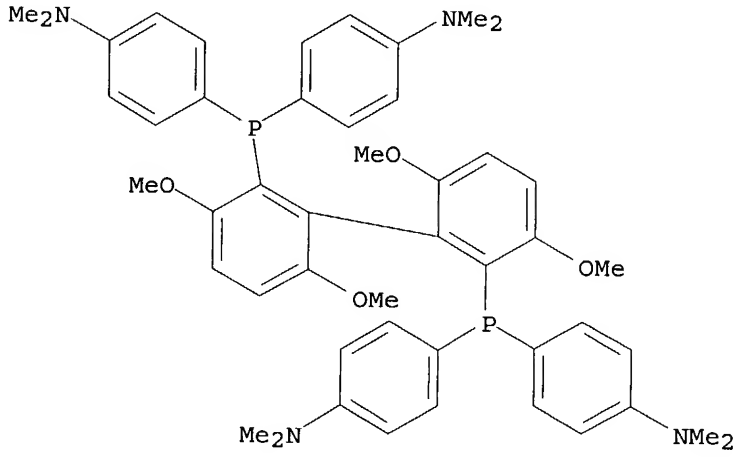
RN 428875-82-5 CAPLUS
CN [1,1'-Biphenyl]-2,2'-diamine, 6,6'-bis[bis[4-(trifluoromethyl)phenyl]phosphino]-N,N,N',N',5,5'-hexamethyl-, (1R)- (9CI) (CA INDEX NAME)



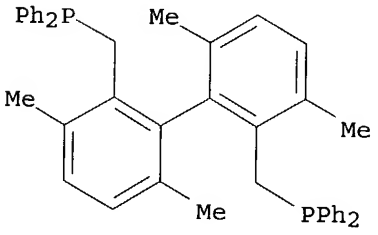
RN 428875-83-6 CAPLUS
CN Phosphine, [(1R)-3,3',6,6'-tetramethoxy[1,1'-biphenyl]-2,2'-diyl]bis[bis[3,5-bis(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



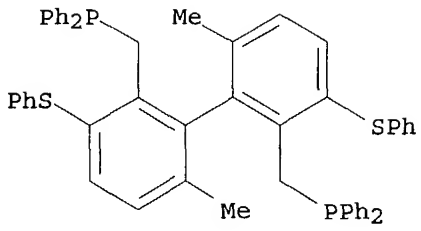
RN 428875-84-7 CAPLUS
CN Benzenamine, 4,4',4'',4'''-[[(1R)-3,3',6,6'-tetramethoxy[1,1'-biphenyl]-2,2'-diyl]diphosphinidyne]tetrakis[N,N-dimethyl- (9CI) (CA INDEX NAME)



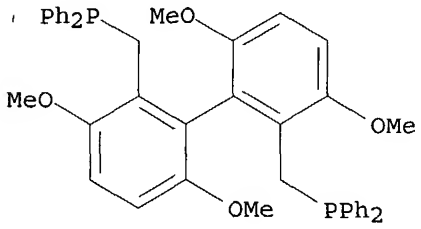
RN 428876-03-3 CAPLUS
CN Phosphine, [[(1R)-3,3',6,6'-tetramethyl[1,1'-biphenyl]-2,2'-diyl]bis(methylene)]bis[diphenyl- (9CI) (CA INDEX NAME)



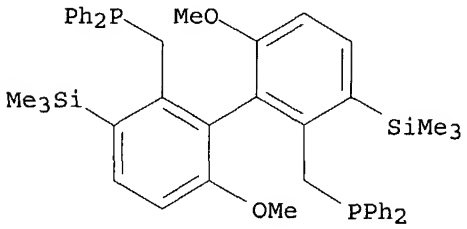
RN 428876-04-4 CAPLUS
CN Phosphine, [[(1R)-6,6'-dimethyl-3,3'-bis(phenylthio)[1,1'-biphenyl]-2,2'-diyl]bis(methylene)]bis[diphenyl- (9CI) (CA INDEX NAME)



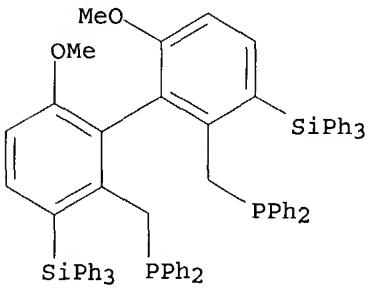
RN 428876-05-5 CAPLUS
CN Phosphine, [[(1R)-3,3',6,6'-tetramethoxy[1,1'-biphenyl]-2,2'-diyl]bis(methylene)]bis[diphenyl- (9CI) (CA INDEX NAME)



RN 428876-06-6 CAPLUS
CN Phosphine, [[(1R)-6,6'-dimethoxy-3,3'-bis(trimethylsilyl)[1,1'-biphenyl]-2,2'-diyl]bis(methylene)]bis[diphenyl- (9CI) (CA INDEX NAME)



RN 428876-07-7 CAPLUS
CN Phosphine, [[(1R)-6,6'-dimethoxy-3,3'-bis(triphenylsilyl)[1,1'-biphenyl]-2,2'-diyl]bis(methylene)]bis[diphenyl- (9CI) (CA INDEX NAME)



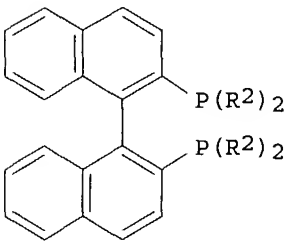
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:885409 CAPLUS
DOCUMENT NUMBER: 136:37900

TITLE: Method for the preparation of optically active trimethyllactic acid and its esters
INVENTOR(S): Sirges, Wolfram; Dreisbach, Claus
PATENT ASSIGNEE(S): Bayer A.-G., Germany
SOURCE: Eur. Pat. Appl., 19 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1160237	A2	20011205	EP 2001-111927	20010518
EP 1160237	A3	20031112		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
DE 10027154	A1	20011213	DE 2000-10027154	20000531
US 2002035271	A1	20020321	US 2001-864906	20010524
US 6583312	B2	20030624		
JP 2002003441	A2	20020109	JP 2001-160426	20010529

PRIORITY APPLN. INFO.: DE 2000-10027154 A 20000531
OTHER SOURCE(S): CASREACT 136:37900; MARPAT 136:37900
GI



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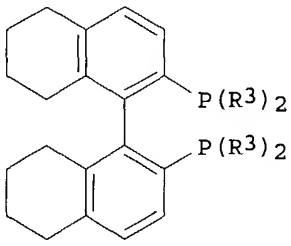

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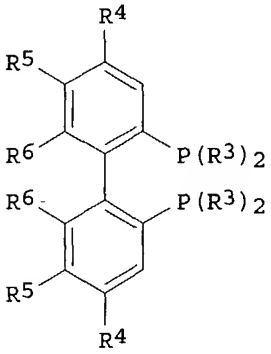

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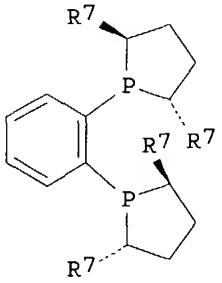


VI

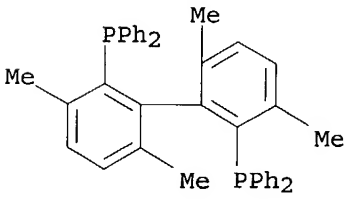
AB A procedure for the prepn. of optically active trimethyllactic acid and its esters, Me3CCH(OH)CO2R1 [R1 = H, (un)substituted C1-20-alkyl (esp. Me, Et, CH2Et, CHMe2, Bu, Me2CHCH2, EtCHMe, pentyl, neopentyl, isopentyl), C6-10-aryl (esp. Ph or naphthyl), C7-15-aralkyl (esp. CH2Ph), C2-12-heteroaryl (esp. 2-, 3-furyl, 2-, 3-pyrrolyl); (I)], through enantioselective hydrogenation of trimethylpyroracemic acid and its esters, Me3CC(:O)CO2R1 (II), in the presence of catalysts (in particular, Ru, Rh and Ir complexes), is characterized by the rare earth metal complex catalyst contg. an optically active bisphosphine ligand, e.g., III (R2 = Ph, C6H4Me-3, C6H4Me-4, C6H3Me2-3,5, C6H4OMe-4, 3,5-dimethyl-4-

methoxyphenyl, cyclohexyl, cyclopentyl), IV (R3 = Ph, C6H4Me-4, C6H3Me2-3,5, C6H4OMe-4, 3,5-dimethyl-4-methoxyphenyl, cyclohexyl), V (R3 = Ph, C6H4Me-4, C6H3Me2-3,5, C6H4OMe-4, 3,5-dimethyl-4-methoxyphenyl, cyclohexyl; R4 = H, Me, OMe; R5 = H, Me, OMe, Cl; R6 = Me, OMe, CF3) and VI (R7 = Me, Et, CH2Et, CHMe2). Thus, I (R1 = Me), was prepd. quant. (97.9% enantiomeric excess), via hydrogenation of II (R1 = Me) in MeOH/MeCOMe contg. catalytic bis(2-methylallyl)(1,5-cycloctadiene)ruthenium(III) and (R)-(+)-2,2.mu.-bis(diphenylphosphino)-1,1.mu.-binaphthyl.

IT **376392-05-1D**, (3,3',6,6'-Tetramethyl-2,2-biphenylene)bis(diphenylphosphine), chiral
RL: CAT (Catalyst use); USES (Uses)
(prepn. of chiral trimethyllactic acid and its esters via enantioselective catalytic hydrogenation of trimethylpyroracemic acid and its esters)

RN 376392-05-1 CAPLUS

CN Phosphine, (3,3',6,6'-tetramethyl[1,1'-biphenyl]-2,2'-diyl)bis[diphenyl- (9CI) (CA INDEX NAME)



L8 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1984:438124 CAPLUS
DOCUMENT NUMBER: 101:38124
TITLE: Optically active amines and enamines
INVENTOR(S): Hansen, Hans Juergen; Schmid, Rudolf; Schmid, Max
PATENT ASSIGNEE(S): Hoffmann-La Roche, F., und Co. A.-G., Switz.
SOURCE: Eur. Pat. Appl., 29 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 104376	A2	19840404	EP 1983-107754	19830806
EP 104376	A3	19840530		
EP 104376	B1	19870506		
R: AT, BE, CH, DE, FR, GB, IT, LI, NL				
DK 8303502	A	19840228	DK 1983-3502	19830729
AT 26971	E	19870515	AT 1983-107754	19830806
US 4578462	A	19860325	US 1983-525529	19830822
JP 59065051	A2	19840413	JP 1983-155164	19830826
US 4902818	A	19900220	US 1988-253882	19881005

PRIORITY APPLN. INFO.:
CH 1982-5110 19820827
CH 1983-3642 19830701
EP 1983-107754 19830806
US 1983-525529 19830822
US 1985-795813 19851107

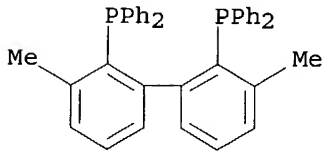
AB Optically active RR1CHMe (R = protected CH2OH, CHO, alkoxycarbonyl; R1 = CH:CHNR2R3, CH2CH:NR2; R2, R3 = lower alkyl, cycloalkyl; R2R3N = heterocycle) were prepd. by isomerization of RCMe:CHCH2NR2R3 in the presence of an optically active Pt-group metal complex catalyst. Thus, E-Me3COCH2CMe:CHCH2NEt2 was heated in THF at 110.degree. in a sealed tube

with (LL1Rh)BF4 [L = norbonadiene; L1 = R-(6,6'-dimethyl-2,2'-biphenylene)bis(diphenylphosphine)] to give a product contg. 68% (E)(R)-Me3COCH2CHMeCH:CHNEt2, hydrolysis of which gave 97% pure R-Me3COCH2CHMeCH2CHO, optical purity 93%.

IT **90809-11-3P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction with rhodium complex)

RN 90809-11-3 CAPLUS

CN Phosphine, (3,3'-dimethyl[1,1'-biphenyl]-2,2'-diyl)bis[diphenyl-, (R)-(9CI) (CA INDEX NAME)



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COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	22.53	341.90

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-2.77	-2.77

FILE 'REGISTRY' ENTERED AT 17:14:53 ON 04 MAR 2004

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 3 MAR 2004 HIGHEST RN 658036-92-1
DICTIONARY FILE UPDATES: 3 MAR 2004 HIGHEST RN 658036-92-1

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2003

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

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L9 STRUCTURE UPLOADED

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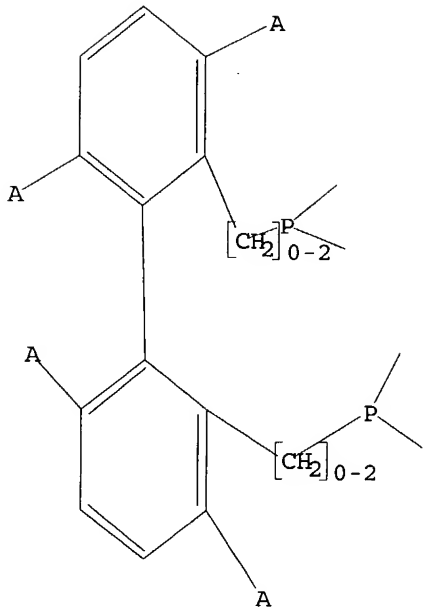

G1 O,N,S

Structure attributes must be viewed using STN Express query preparation.

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SAMPLE SCREEN SEARCH COMPLETED -    120 TO ITERATE

100.0% PROCESSED     120 ITERATIONS                                1 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:          1743 TO     3057
PROJECTED ANSWERS:                1 TO       80

L10           1 SEA SSS SAM L9

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FULL SEARCH INITIATED 17:16:10 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -   2299 TO ITERATE

100.0% PROCESSED    2299 ITERATIONS                               25 ANSWERS
SEARCH TIME: 00.00.01

L11          25 SEA SSS FUL L9

=> d scan

L11  25 ANSWERS   REGISTRY  COPYRIGHT 2004 ACS on STN
IN   Phosphine, [(1S)-3,3',4,4',5,5',6,6'-octamethyl[1,1'-biphenyl]-2,2'-
     diyl]bis[diethyl- (9CI)
MF   C28 H44 P2
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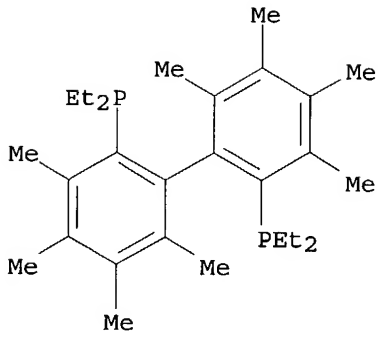
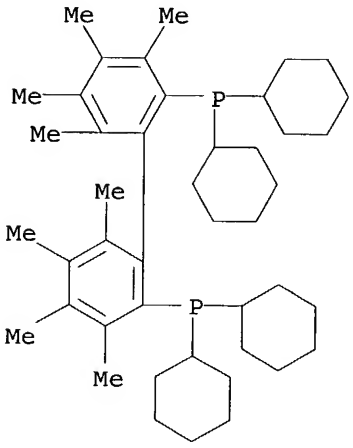


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):10

L11 25 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, (3,3',4,4',5,5',6,6'-octamethyl[1,1'-biphenyl]-2,2'-diyl)bis[dicyclohexyl- (9CI)
MF C44 H68 P2



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

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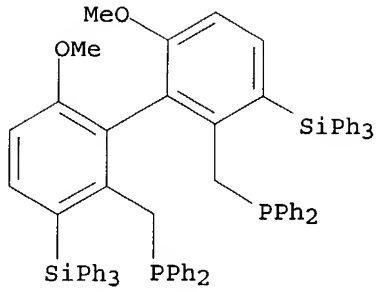
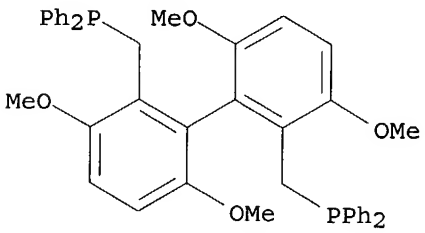


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L11 25 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, [[(1R)-3,3',6,6'-tetramethoxy[1,1'-biphenyl]-2,2'-diyl]bis(methylene)]bis[diphenyl- (9CI)
MF C42 H40 O4 P2



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L11 25 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
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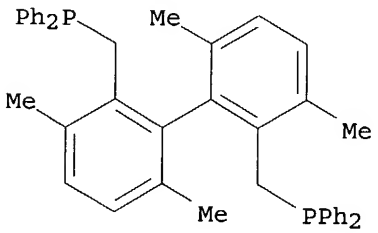
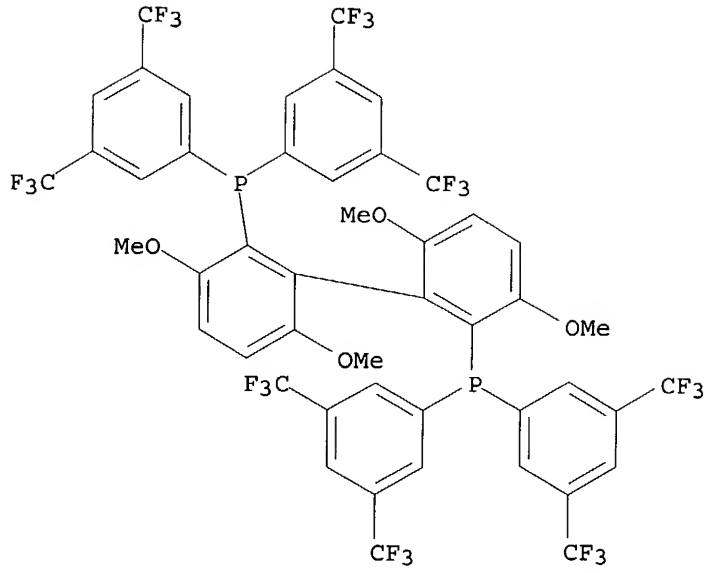
MF C42 H40 P2



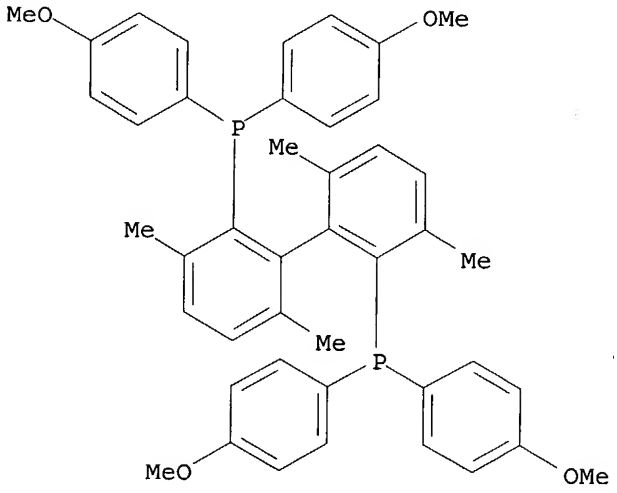
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L11 25 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, [(1R)-3,3',6,6'-tetramethoxy[1,1'-biphenyl]-2,2'-diyl]bis[bis[3,5-bis(trifluoromethyl)phenyl]- (9CI)
MF C48 H28 F24 O4 P2



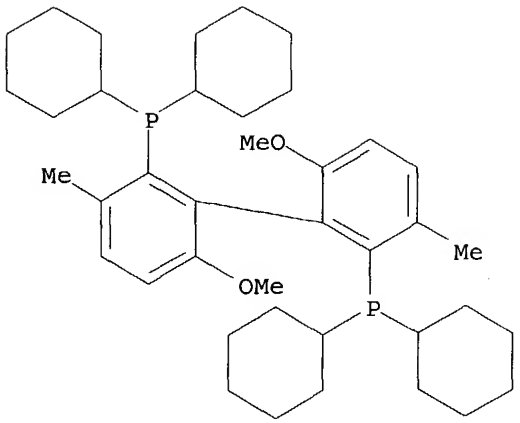
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L11 25 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, [(1R)-3,3',6,6'-tetramethyl[1,1'-biphenyl]-2,2'-diyl]bis[bis(4-methoxyphenyl)- (9CI)
MF C44 H44 O4 P2



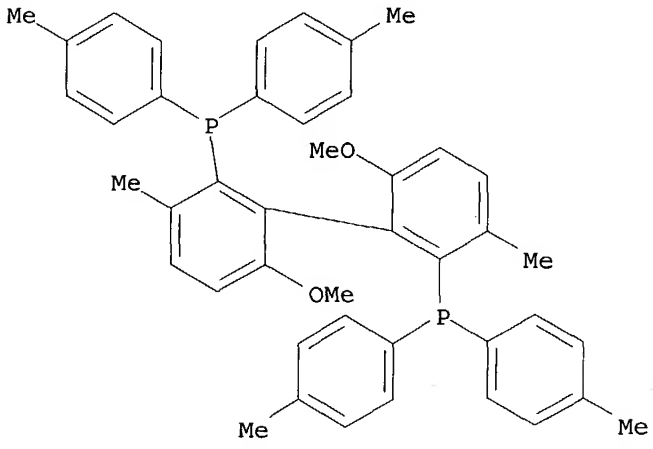
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L11 25 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, [(1R)-6,6'-dimethoxy-3,3'-dimethyl[1,1'-biphenyl]-2,2'-diyl]bis[dicyclohexyl- (9CI)
MF C40 H60 O2 P2



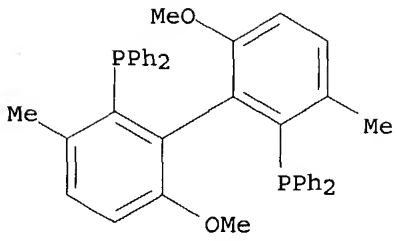
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L11 25 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, [(1R)-6,6'-dimethoxy-3,3'-dimethyl[1,1'-biphenyl]-2,2'-diyl]bis[bis(4-methylphenyl)- (9CI)
MF C44 H44 O2 P2



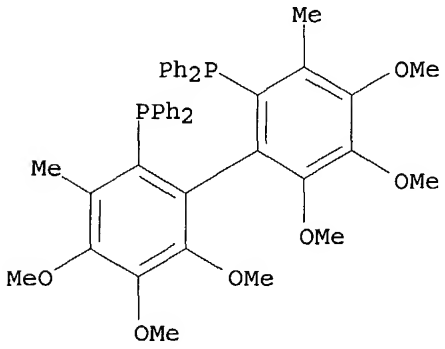
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L11 25 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, [(1R)-6,6'-dimethoxy-3,3'-dimethyl[1,1'-biphenyl]-2,2'-diyl]bis[diphenyl- (9CI)
MF C40 H36 O2 P2



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

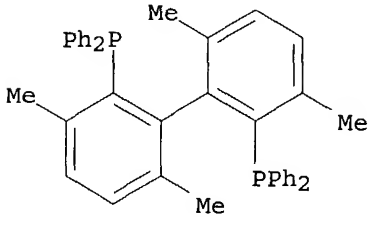
L11 25 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, [(1R)-4,4',5,5',6,6'-hexamethoxy-3,3'-dimethyl[1,1'-biphenyl]-2,2'-diyl]bis[diphenyl- (9CI)
MF C44 H44 O6 P2



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

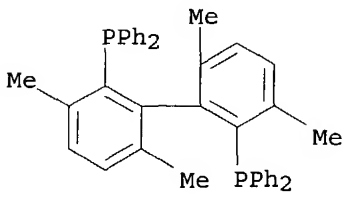
HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):10

L11 25 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, [(1R)-3,3',6,6'-tetramethyl[1,1'-biphenyl]-2,2'-diyl]bis[diphenyl- (9CI)
MF C40 H36 P2



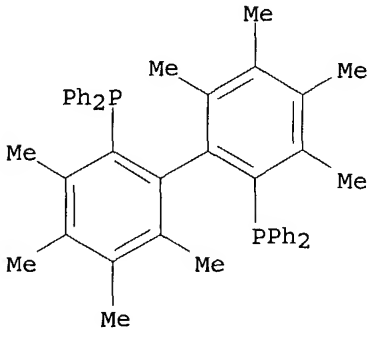
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L11 25 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, (3,3',6,6'-tetramethyl[1,1'-biphenyl]-2,2'-diyl)bis[diphenyl-
(9CI)
MF C40 H36 P2



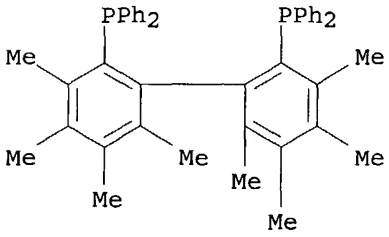
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L11 25 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, [(1S)-3,3',4,4',5,5',6,6'-octamethyl[1,1'-biphenyl]-2,2'-
diyl]bis[diphenyl- (9CI)
MF C44 H44 P2



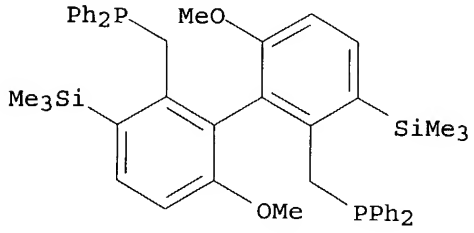
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L11 25 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, (3,3',4,4',5,5',6,6'-octamethyl[1,1'-biphenyl]-2,2'-
diyl)bis[diphenyl- (9CI)
MF C44 H44 P2



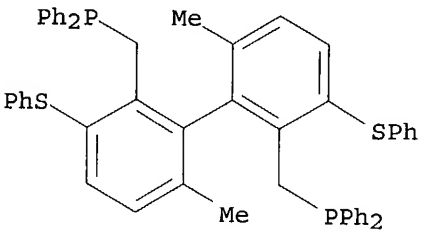
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L11 25 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, [[(1R)-6,6'-dimethoxy-3,3'-bis(trimethylsilyl)[1,1'-biphenyl]-2,2'-diyl]bis(methylene)]bis[diphenyl- (9CI)
MF C46 H52 O2 P2 Si2



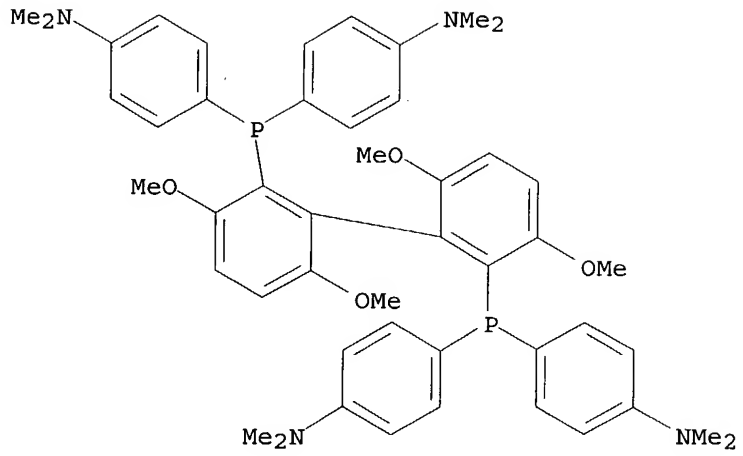
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L11 25 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, [[(1R)-6,6'-dimethyl-3,3'-bis(phenylthio)[1,1'-biphenyl]-2,2'-diyl]bis(methylene)]bis[diphenyl- (9CI)
MF C52 H44 P2 S2



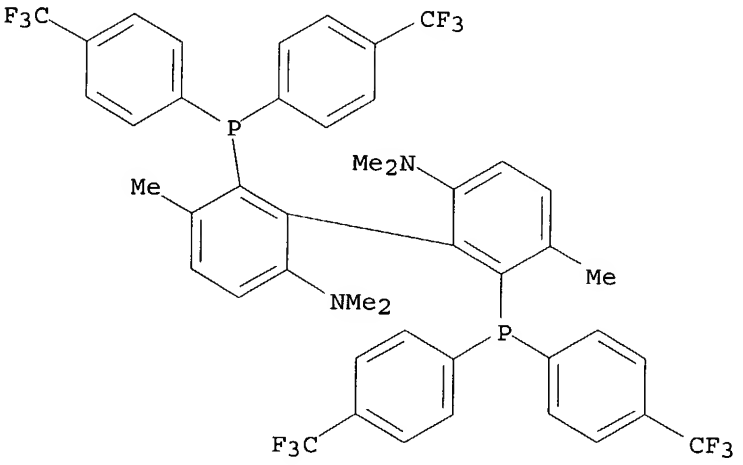
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L11 25 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Benzenamine, 4,4',4'',4'''-[[(1R)-3,3',6,6'-tetramethoxy[1,1'-biphenyl]-2,2'-diyl]diphosphinidyne]tetrakis[N,N-dimethyl- (9CI)
MF C48 H56 N4 O4 P2



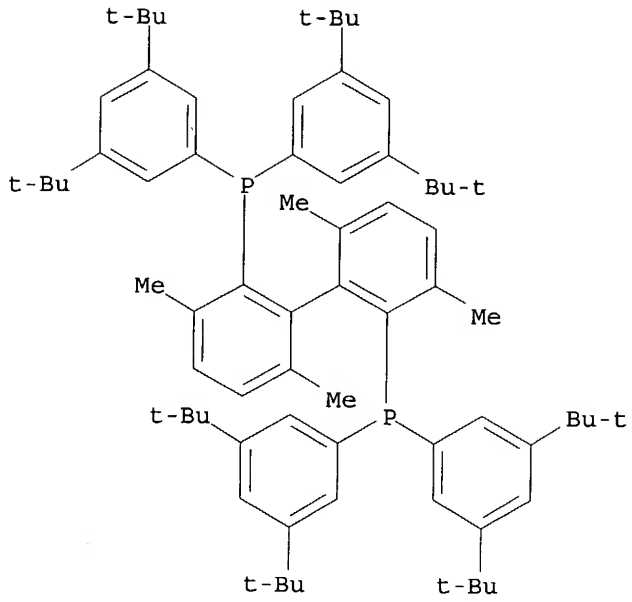
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L11 25 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN [1,1'-Biphenyl]-2,2'-diamine, 6,6'-bis[bis[4-(trifluoromethyl)phenyl]phosphino]-N,N,N',N',5,5'-hexamethyl-, (1R)- (9CI)
MF C46 H38 F12 N2 P2



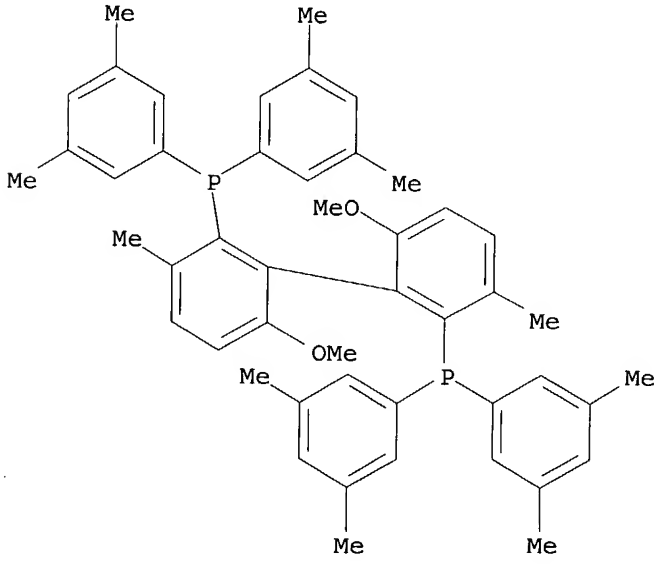
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L11 25 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, [(1R)-3,3',6,6'-tetramethyl[1,1'-biphenyl]-2,2'-diyl]bis[bis[3,5-bis(1,1-dimethylethyl)phenyl]- (9CI)
MF C72 H100 P2



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L11 25 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN
IN Phosphine, [(1R)-6,6'-dimethoxy-3,3'-dimethyl[1,1'-biphenyl]-2,2'-diyl]bis[bis(3,5-dimethylphenyl)- (9CI)
MF C48 H52 O2 P2



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):0

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	SINCE FILE ENTRY	TOTAL SESSION

FULL ESTIMATED COST 156.26 498.16

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) SINCE FILE ENTRY TOTAL SESSION

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USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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FILE COVERS 1907 - 4 Mar 2004 VOL 140 ISS 10
FILE LAST UPDATED: 3 Mar 2004 (20040303/ED)

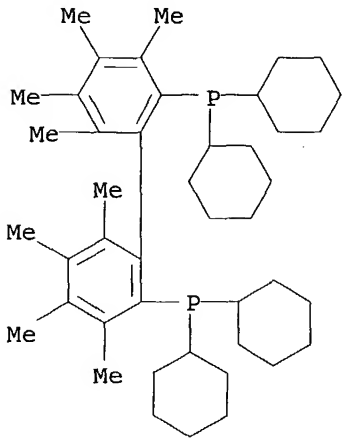
This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s l11
L12 3 L11

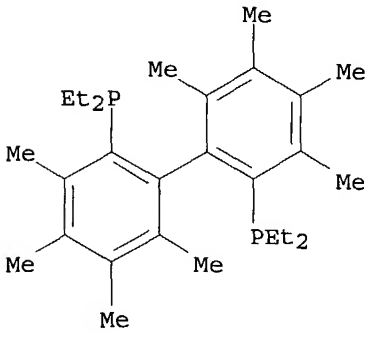
=> d ibib abs hitstr 1-3

L12 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:216177 CAPLUS
DOCUMENT NUMBER: 139:214664
TITLE: Preparation of an optically active bis(diethylphosphino)biphenyl ligand designed for highly reactive catalytic processes
AUTHOR(S): Shibata, Tomomi; Tsuruta, Hideyuki; Danjo, Hiroshi; Imamoto, Tsuneo
CORPORATE SOURCE: Faculty of Science, Department of Chemistry, Chiba University, Inage-ku, Chiba, 263-8522, Japan
SOURCE: Journal of Molecular Catalysis A: Chemical (2003), 196(1-2), 117-124
CODEN: JMCCF2; ISSN: 1381-1169
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 139:214664
AB New optically active diphosphine ligands, (S)-2,2'-bis(diphenylphosphino)-3,3',4,4',5,5',6,6'-octamethylbiphenyl and (S)-2,2'-bis(diethylphosphino)-3,3',4,4',5,5',6,6'-octamethylbiphenyl (2c) were prepd. via optical resoln. of the corresponding phosphine oxides. The Rh complex of 2c proved efficient in the catalytic asym. hydrogenation of a dehydroamino acid deriv. even at -50 .degree.C and gave 88% e.e. of hydrogenation product quant.
IT **586410-79-9P 590383-54-3P**
RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(prepn. of optically-active biphenyl phosphine ligand for rhodium-catalyzed hydrogenation of acetamidocinnamate)
RN 586410-79-9 CAPLUS

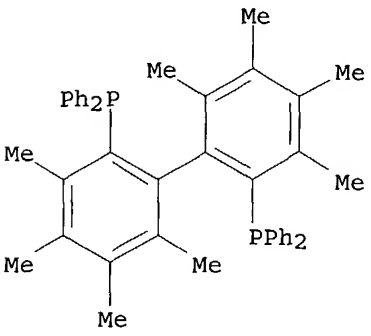
CN Phosphine, (3,3',4,4',5,5',6,6'-octamethyl[1,1'-biphenyl]-2,2'-diyl)bis[dicyclohexyl- (9CI) (CA INDEX NAME)



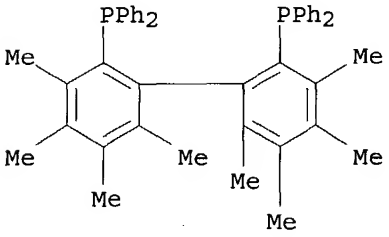
RN 590383-54-3 CAPLUS
CN Phosphine, [(1S)-3,3',4,4',5,5',6,6'-octamethyl[1,1'-biphenyl]-2,2'-diyl]bis[diethyl- (9CI) (CA INDEX NAME)



IT **590383-52-1P**
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(prepn. of optically-active biphenyl phosphine ligand for rhodium-catalyzed hydrogenation of acetamidocinnamate)
RN 590383-52-1 CAPLUS
CN Phosphine, [(1S)-3,3',4,4',5,5',6,6'-octamethyl[1,1'-biphenyl]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



IT **586410-77-7P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of optically-active biphenyl phosphine ligand for rhodium-catalyzed hydrogenation of acetamidocinnamate)
RN 586410-77-7 CAPLUS
CN Phosphine, (3,3',4,4',5,5',6,6'-octamethyl[1,1'-biphenyl]-2,2'-diyl)bis[diphenyl- (9CI) (CA INDEX NAME)

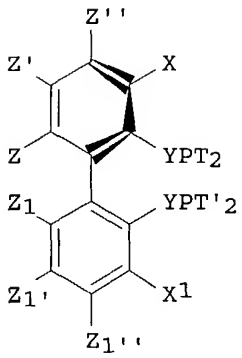


REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:391724 CAPLUS
DOCUMENT NUMBER: 136:401880
TITLE: Ortho substituted chiral phosphines and phosphinites and their use in asymmetric catalytic reactions
INVENTOR(S): Zhang, Xumu
PATENT ASSIGNEE(S): The Penn State Research Foundation, USA
SOURCE: PCT Int. Appl., 122 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002040491	A1	20020523	WO 2001-US43779	20011116
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2002016719	A5	20020527	AU 2002-16719	20011116
US 2002128501	A1	20020912	US 2001-991261	20011116
US 6653485	B2	20031125		
EP 1341797	A1	20030910	EP 2001-996543	20011116
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				

PRIORITY APPLN. INFO.: US 2000-249537P P 20001117
US 2001-301221P P 20010627
WO 2001-US43779 W 20011116
OTHER SOURCE(S): CASREACT 136:401880; MARPAT 136:401880
GI



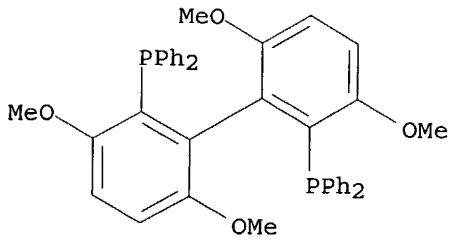
I

AB 3,3'-Substituted chiral biaryl phosphine and phosphinite ligands, I (X, X' = independently (un)substituted alkyl, (un)substituted aryl, alkoxy, organothio, diorganoamido, alkoxycarbonyl, halo, organosilyl, diorganophosphonyl, dialkoxyphosphino; Z, Z1 = independently (un)substituted alkyl, (un)substituted aryl, alkoxy, organothio, diorganoamido, alkoxycarbonyl, halo, organosilyl, diorganophosphonyl, dialkoxyphosphino, bridging group, etc.; Z', Z'', Z1', Z1'' = independently H, (un)substituted alkyl, (un)substituted aryl, alkoxy, organothio, diorganoamido, alkoxycarbonyl, halo, organosilyl, diorganophosphonyl, dialkoxyphosphino, bridging group, etc.; Y, Y' = O, CH2, NH, S, a bond between carbon and phosphorus, etc.; T, T' = (un)substituted alkyl, (un)substituted aryl, alkoxy, etc.) and metal complexes based on such chiral ligands useful in asym. catalysis are disclosed. The metal complexes are useful as catalysts in asym. reactions, such as, hydrogenation, hydride transfer, allylic alkylation, hydrosilylation, hydroboration, hydrovinylation, hydroformylation, hydroformylation, olefin metathesis, hydrocarboxylation, isomerization, cyclopropanation, Diels-Alder reaction, Heck reaction, isomerization, Aldol reaction, Michael addn., epoxidn., Kinetic resoln. and [m + n] cycloaddn. The metal complexes are particularly effective in Ru-catalyzed asym. hydrogenation of beta-ketoesters to beta-hydroxyesters and Ru-catalyzed asym. hydrogenation of enamides to beta amino acids. Thus, (R)-3,3'-diphenyl-2,2'-bis(diphenylphosphinoxy)-1,1'-binaphthyl was prepd. in five steps starting from (R)-BINOL.

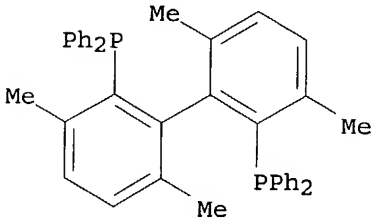
IT **428874-77-5P 428875-68-7P 428875-69-8P**
428875-72-3P 428875-74-5P 428875-75-6P
428875-76-7P 428875-77-8P 428875-78-9P
428875-79-0P 428875-80-3P 428875-81-4P
428875-82-5P 428875-83-6P 428875-84-7P
428876-03-3P 428876-04-4P 428876-05-5P
428876-06-6P 428876-07-7P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(prepn. of ortho substituted chiral phosphines and phosphinites and their use in asym. catalytic reactions)

RN 428874-77-5 CAPLUS

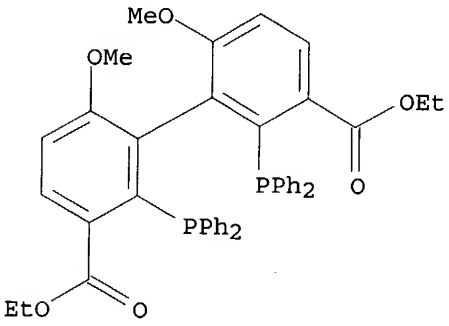
CN Phosphine, [(1S)-3,3',6,6'-tetramethoxy[1,1'-biphenyl]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



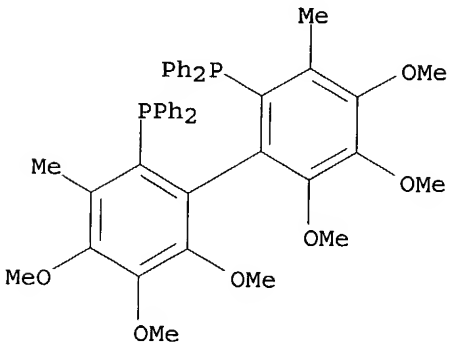
RN 428875-68-7 CAPLUS
CN Phosphine, [(1R)-3,3',6,6'-tetramethyl[1,1'-biphenyl]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



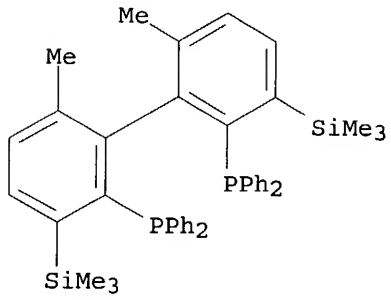
RN 428875-69-8 CAPLUS
CN [1,1'-Biphenyl]-3,3'-dicarboxylic acid, 2,2'-bis(diphenylphosphino)-6,6'-dimethoxy-, diethyl ester, (1R)- (9CI) (CA INDEX NAME)



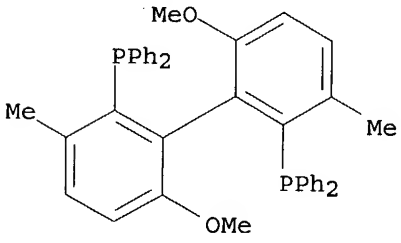
RN 428875-72-3 CAPLUS
CN Phosphine, [(1R)-4,4',5,5',6,6'-hexamethoxy-3,3'-dimethyl[1,1'-biphenyl]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



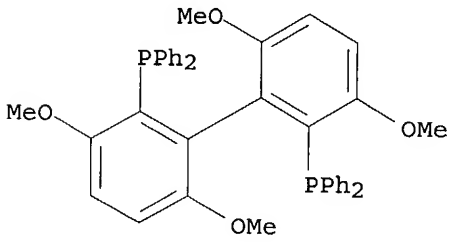
RN 428875-74-5 CAPLUS
CN Phosphine, [(1R)-6,6'-dimethyl-3,3'-bis(trimethylsilyl)[1,1'-biphenyl]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



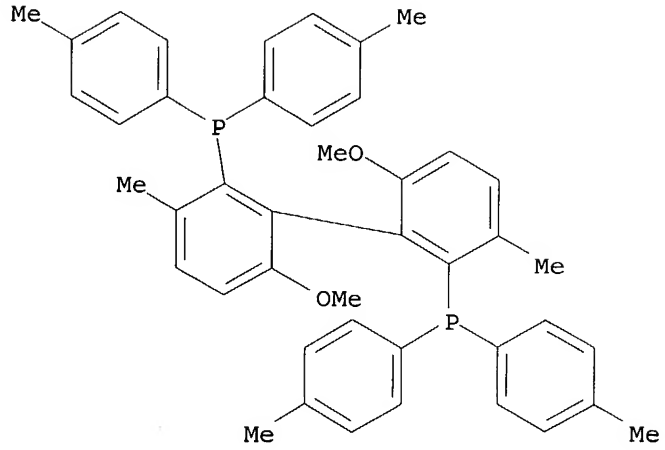
RN 428875-75-6 CAPLUS
CN Phosphine, [(1R)-6,6'-dimethoxy-3,3'-dimethyl[1,1'-biphenyl]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



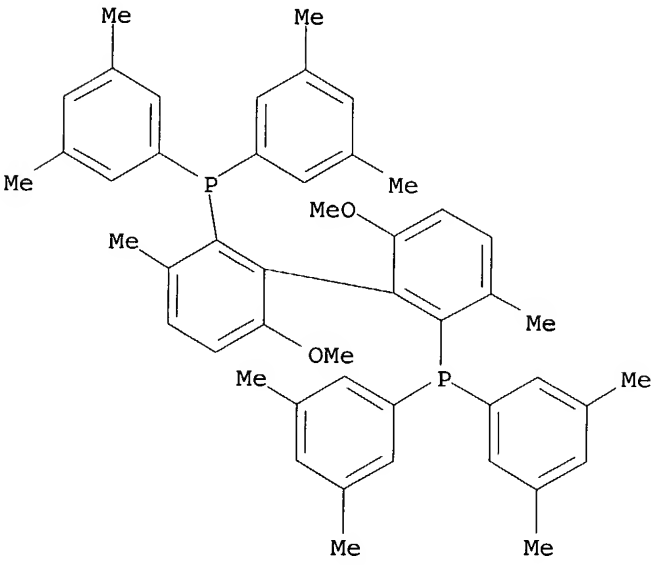
RN 428875-76-7 CAPLUS
CN Phosphine, [(1R)-3,3',6,6'-tetramethoxy[1,1'-biphenyl]-2,2'-diyl]bis[diphenyl- (9CI) (CA INDEX NAME)



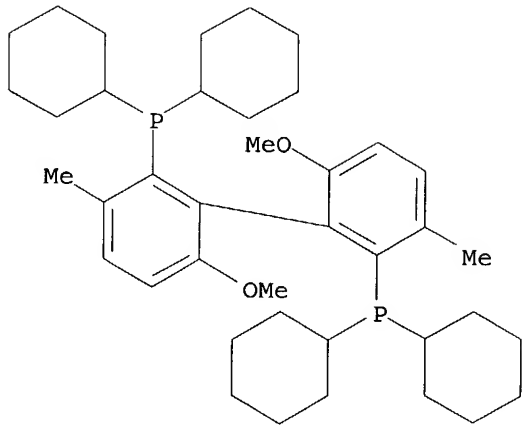
RN 428875-77-8 CAPLUS
CN Phosphine, [(1R)-6,6'-dimethoxy-3,3'-dimethyl[1,1'-biphenyl]-2,2'-diyl]bis[bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



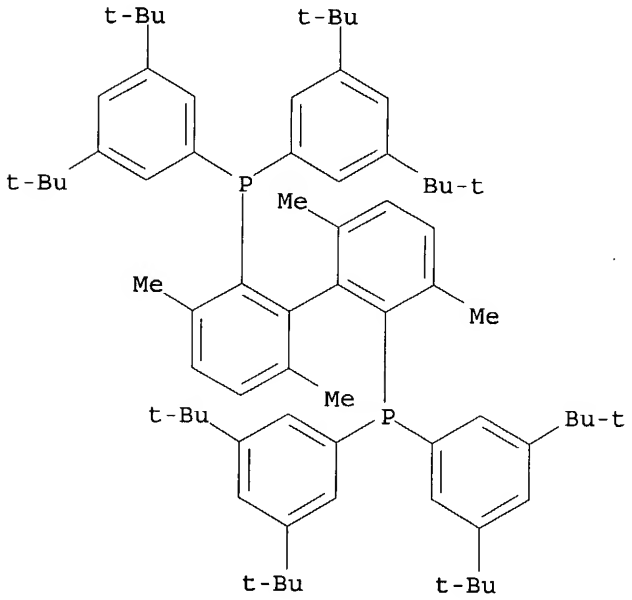
RN 428875-78-9 CAPLUS
CN Phosphine, [(1R)-6,6'-dimethoxy-3,3'-dimethyl[1,1'-biphenyl]-2,2'-diyl]bis[bis(3,5-dimethylphenyl)- (9CI) (CA INDEX NAME)



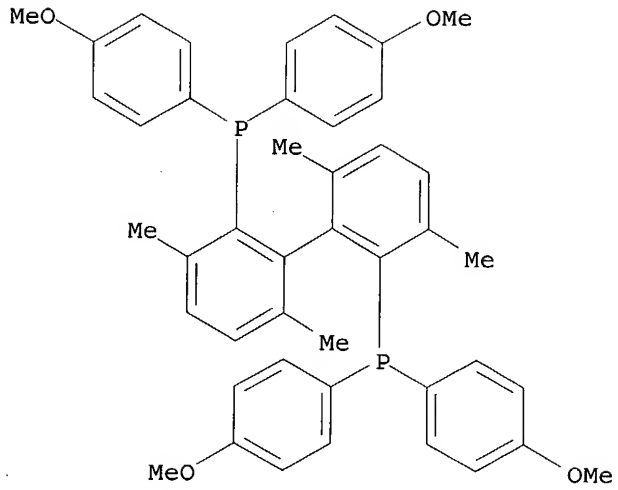
RN 428875-79-0 CAPLUS
CN Phosphine, [(1R)-6,6'-dimethoxy-3,3'-dimethyl[1,1'-biphenyl]-2,2'-diyl]bis[dicyclohexyl- (9CI) (CA INDEX NAME)



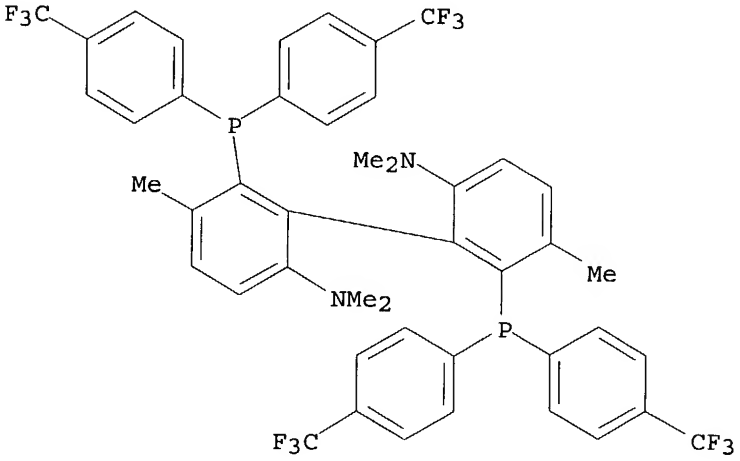
RN 428875-80-3 CAPLUS
CN Phosphine, [(1R)-3,3',6,6'-tetramethyl[1,1'-biphenyl]-2,2'-diyl]bis[bis[3,5-bis(1,1-dimethylethyl)phenyl]- (9CI) (CA INDEX NAME)



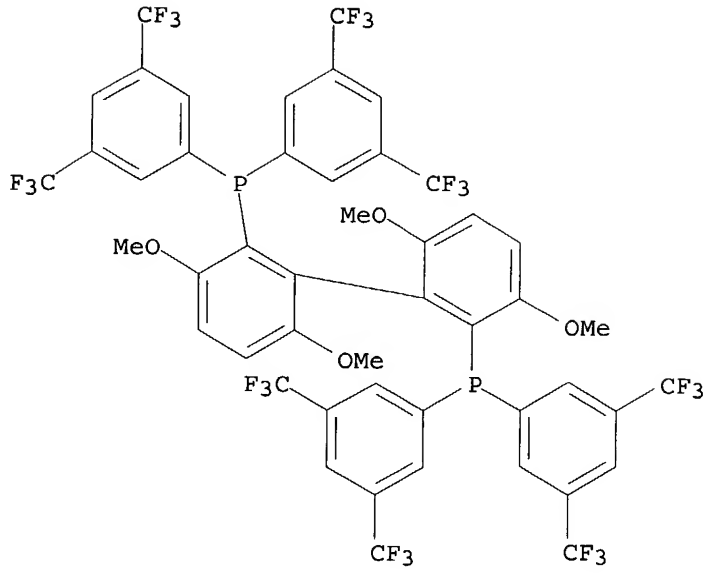
RN 428875-81-4 CAPLUS
CN Phosphine, [(1R)-3,3',6,6'-tetramethyl[1,1'-biphenyl]-2,2'-diyl]bis[bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



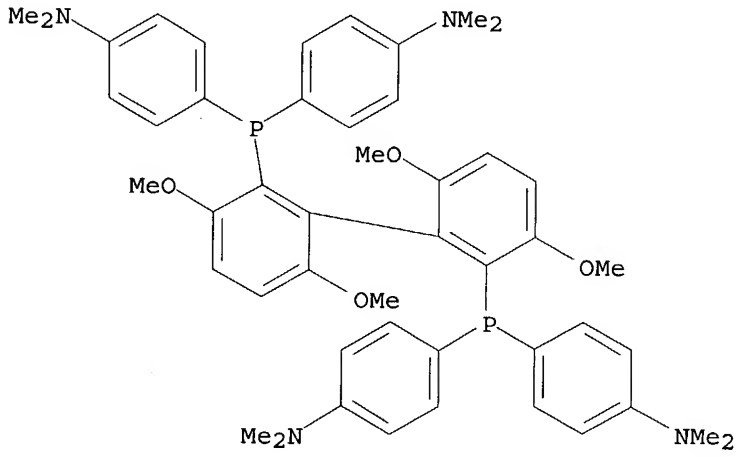
RN 428875-82-5 CAPLUS
CN [1,1'-Biphenyl]-2,2'-diamine, 6,6'-bis[bis[4-(trifluoromethyl)phenyl]phosphino]-N,N,N',N',5,5'-hexamethyl-, (1R)- (9CI) (CA INDEX NAME)



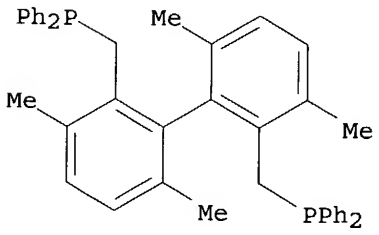
RN 428875-83-6 CAPLUS
CN Phosphine, [(1R)-3,3',6,6'-tetramethoxy[1,1'-biphenyl]-2,2'-diyl]bis[bis[3,5-bis(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



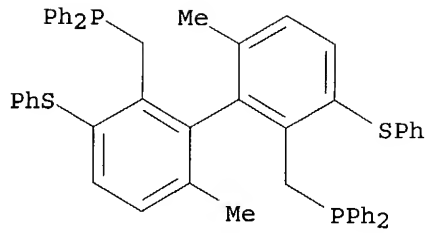
RN 428875-84-7 CAPLUS
CN Benzenamine, 4,4',4'',4'''-[[(1R)-3,3',6,6'-tetramethoxy[1,1'-biphenyl]-2,2'-diyl]diphosphinidyne]tetrakis[N,N-dimethyl- (9CI) (CA INDEX NAME)



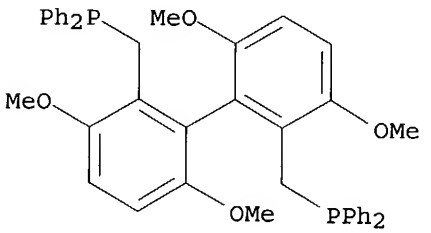
RN 428876-03-3 CAPLUS
CN Phosphine, [[(1R)-3,3',6,6'-tetramethyl[1,1'-biphenyl]-2,2'-diyl]bis(methylene)]bis[diphenyl- (9CI) (CA INDEX NAME)



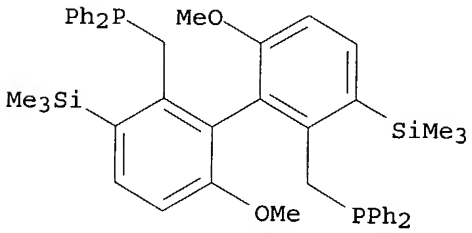
RN 428876-04-4 CAPLUS
CN Phosphine, [[(1R)-6,6'-dimethyl-3,3'-bis(phenylthio)[1,1'-biphenyl]-2,2'-diyl]bis(methylene)]bis[diphenyl- (9CI) (CA INDEX NAME)



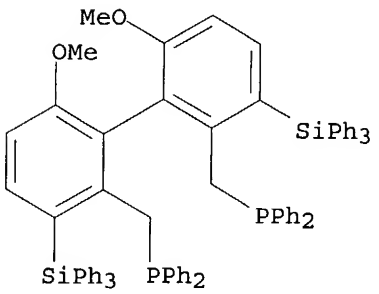
RN 428876-05-5 CAPLUS
CN Phosphine, [[(1R)-3,3',6,6'-tetramethoxy[1,1'-biphenyl]-2,2'-diyl]bis(methylene)]bis[diphenyl- (9CI) (CA INDEX NAME)



RN 428876-06-6 CAPLUS
CN Phosphine, [[(1R)-6,6'-dimethoxy-3,3'-bis(trimethylsilyl)[1,1'-biphenyl]-2,2'-diyl]bis(methylene)]bis[diphenyl- (9CI) (CA INDEX NAME)



RN 428876-07-7 CAPLUS
CN Phosphine, [[(1R)-6,6'-dimethoxy-3,3'-bis(triphenylsilyl)[1,1'-biphenyl]-2,2'-diyl]bis(methylene)]bis[diphenyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:885409 CAPLUS
DOCUMENT NUMBER: 136:37900

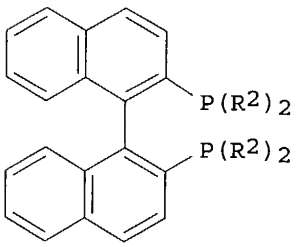
TITLE: Method for the preparation of optically active trimethyllactic acid and its esters

INVENTOR(S): Sirges, Wolfram; Dreisbach, Claus
PATENT ASSIGNEE(S): Bayer A.-G., Germany

SOURCE: Eur. Pat. Appl., 19 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1160237	A2	20011205	EP 2001-111927	20010518
EP 1160237	A3	20031112		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
DE 10027154	A1	20011213	DE 2000-10027154	20000531
US 2002035271	A1	20020321	US 2001-864906	20010524
US 6583312	B2	20030624		
JP 2002003441	A2	20020109	JP 2001-160426	20010529

PRIORITY APPLN. INFO.: DE 2000-10027154 A 20000531
OTHER SOURCE(S): CASREACT 136:37900; MARPAT 136:37900
GI



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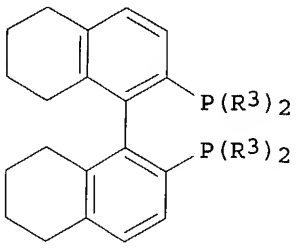

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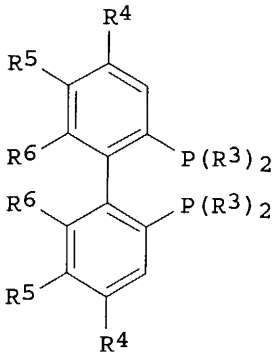

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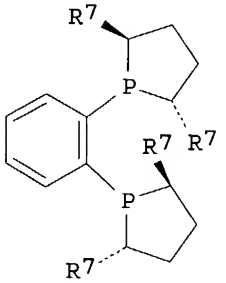


VI

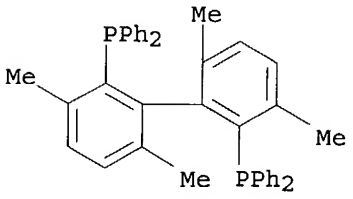
AB A procedure for the prepn. of optically active trimethyllactic acid and its esters, Me3CCH(OH)CO2R1 [R1 = H, (un)substituted C1-20-alkyl (esp. Me, Et, CH2Et, CHMe2, Bu, Me2CHCH2, EtCHMe, pentyl, neopentyl, isopentyl), C6-10-aryl (esp. Ph or naphthyl), C7-15-aralkyl (esp. CH2Ph), C2-12-heteroaryl (esp. 2-, 3-furyl, 2-, 3-pyrrolyl); (I)], through enantioselective hydrogenation of trimethylpyroracemic acid and its esters, Me3CC(:O)CO2R1 (II), in the presence of catalysts (in particular, Ru, Rh and Ir complexes), is characterized by the rare earth metal complex catalyst contg. an optically active bisphosphine ligand, e.g., III (R2 = Ph, C6H4Me-3, C6H4Me-4, C6H3Me2-3,5, C6H4OMe-4, 3,5-dimethyl-4-

methoxyphenyl, cyclohexyl, cyclopentyl), IV (R3 = Ph, C6H4Me-4, C6H3Me2-3,5, C6H4OMe-4, 3,5-dimethyl-4-methoxyphenyl, cyclohexyl), V (R3 = Ph, C6H4Me-4, C6H3Me2-3,5, C6H4OMe-4, 3,5-dimethyl-4-methoxyphenyl, cyclohexyl; R4 = H, Me, OMe; R5 = H, Me, OMe, Cl; R6 = Me, OMe, CF3) and VI (R7 = Me, Et, CH2Et, CHMe2). Thus, I (R1 = Me), was prepd. quant. (97.9% enantiomeric excess), via hydrogenation of II (R1 = Me) in MeOH/MeCOMe contg. catalytic bis(2-methylallyl)(1,5-cycloctadiene)ruthenium(III) and (R)-(+)-2,2.mu.-bis(diphenylphosphino)-1,1.mu.-binaphthyl.

IT **376392-05-1D**, (3,3',6,6'-Tetramethyl-2,2-biphenylene)bis(diphenylphosphine), chiral
RL: CAT (Catalyst use); USES (Uses)
(prepn. of chiral trimethyllactic acid and its esters via enantioselective catalytic hydrogenation of trimethylpyroracemic acid and its esters)

RN 376392-05-1 CAPLUS

CN Phosphine, (3,3',6,6'-tetramethyl[1,1'-biphenyl]-2,2'-diyl)bis[diphenyl-(9CI) (CA INDEX NAME)



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L1 STRUCTURE UPLOADED

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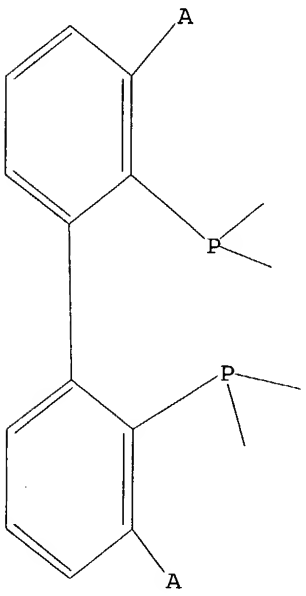
L1 STR



Structure attributes must be viewed using STN Express query preparation.

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L2 STRUCTURE UPLOADED

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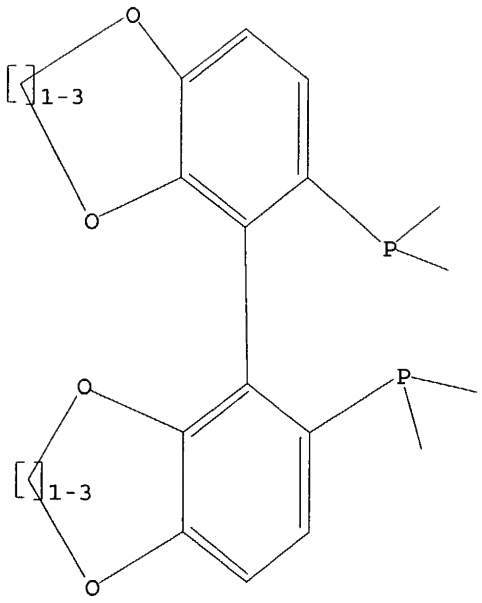
L2 HAS NO ANSWERS
L2 STR



Structure attributes must be viewed using STN Express query preparation.

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SAMPLE SCREEN SEARCH COMPLETED -      2 TO ITERATE

100.0% PROCESSED       2 ITERATIONS                                1 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:            2 TO      124
PROJECTED ANSWERS:               1 TO       80

L3            1 SEA SSS SAM L2

=> d

L3   ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2003 ACS
RN   210169-50-9  REGISTRY
CN   Phosphine, [4,4'-bi-1,3-benzodioxole]-5,5'-diylbis[bis(4-chlorophenyl)-,
     (+)- (9CI)  (CA INDEX NAME)
MF   C38 H24 Cl4 O4 P2
SR   CA
LC   STN Files:   CA, CAPLUS, USPATFULL
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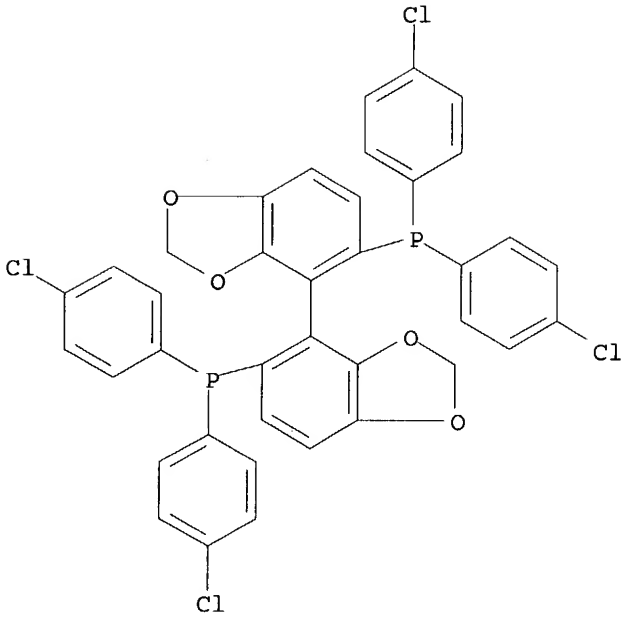


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1962 TO DATE)
1 REFERENCES IN FILE CAPLUS (1962 TO DATE)

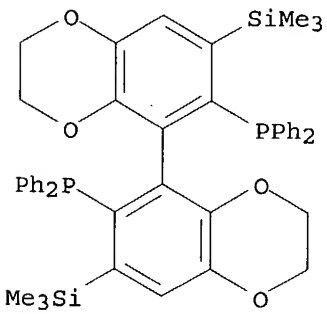
=> s l2 full
FULL SEARCH INITIATED 16:04:58 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 52 TO ITERATE

100.0% PROCESSED 52 ITERATIONS 21 ANSWERS
SEARCH TIME: 00.00.01

L4 21 SEA SSS FUL L2

=> d scan

L4 21 ANSWERS REGISTRY COPYRIGHT 2003 ACS
IN Phosphine, [(5R)-2,2',3,3'-tetrahydro-7,7'-bis(trimethylsilyl)[5,5'-bi-1,4-benzodioxin]-6,6'-diyl]bis[diphenyl- (9CI)
MF C46 H48 O4 P2 Si2



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):10

L4 21 ANSWERS REGISTRY COPYRIGHT 2003 ACS
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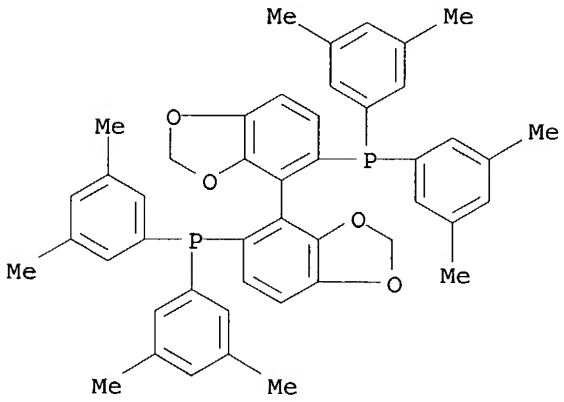
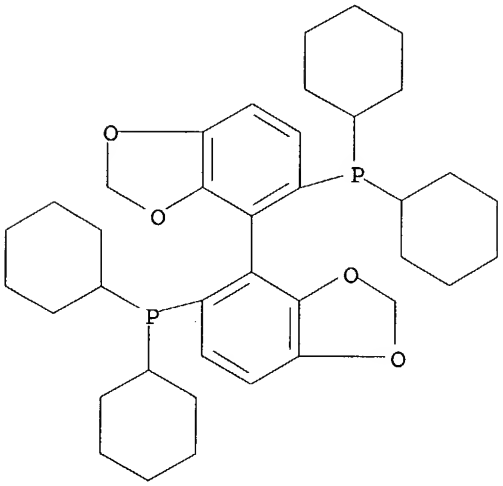
(9CI)
MF C46 H44 O4 P2



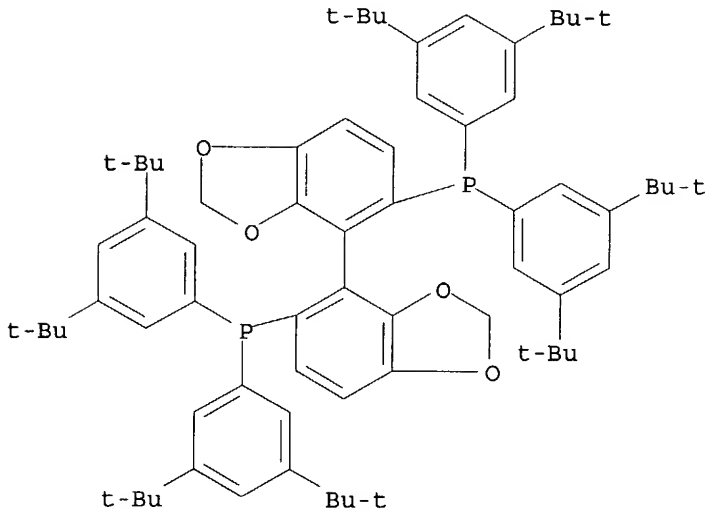
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L4 21 ANSWERS REGISTRY COPYRIGHT 2003 ACS
IN Phosphine, [4,4'-bi-1,3-benzodioxole]-5,5'-diylbis[dicyclohexyl-, (+)-
(9CI)
MF C38 H52 O4 P2



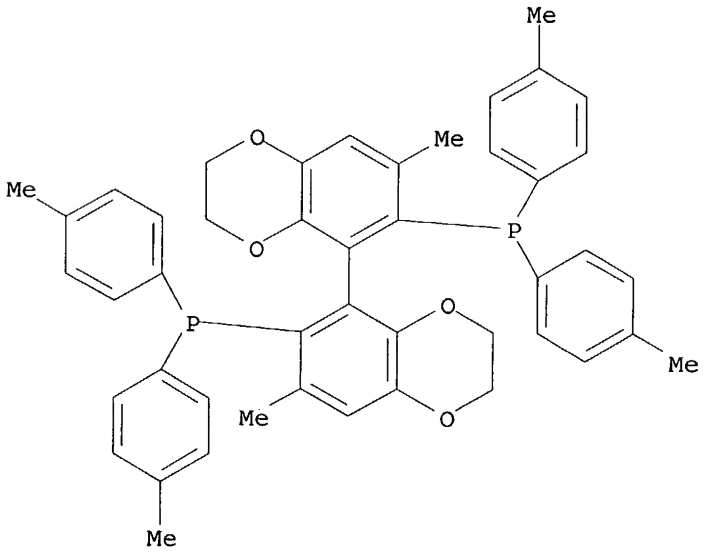
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L4 21 ANSWERS REGISTRY COPYRIGHT 2003 ACS
IN Phosphine, [4,4'-bi-1,3-benzodioxole]-5,5'-diylbis[bis[3,5-bis(1,1-dimethylethyl)phenyl]-, (+)- (9CI)
MF C70 H92 O4 P2



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L4 21 ANSWERS REGISTRY COPYRIGHT 2003 ACS
IN Phosphine, [(5R)-2,2',3,3'-tetrahydro-7,7'-dimethyl[5,5'-bi-1,4-benzodioxin]-6,6'-diyl]bis[bis(4-methylphenyl)- (9CI)
MF C46 H44 O4 P2



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L4 21 ANSWERS REGISTRY COPYRIGHT 2003 ACS
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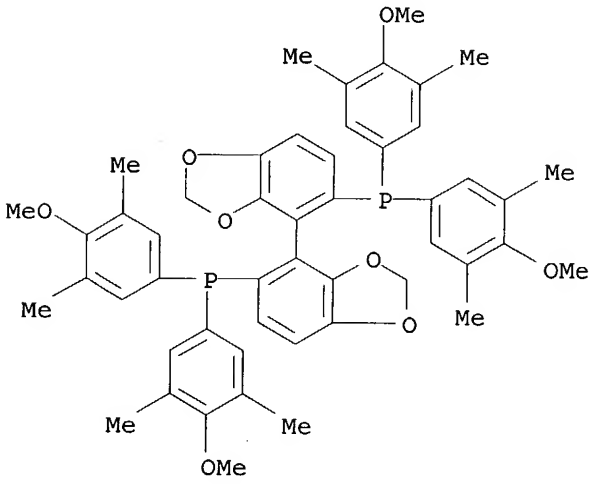
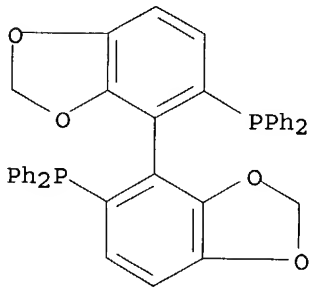
MF C50 H52 O8 P2



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L4 21 ANSWERS REGISTRY COPYRIGHT 2003 ACS
IN Phosphine, (4S)-[4,4'-bi-1,3-benzodioxole]-5,5'-diylbis[diphenyl- (9CI)
MF C38 H28 O4 P2



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L4 21 ANSWERS REGISTRY COPYRIGHT 2003 ACS
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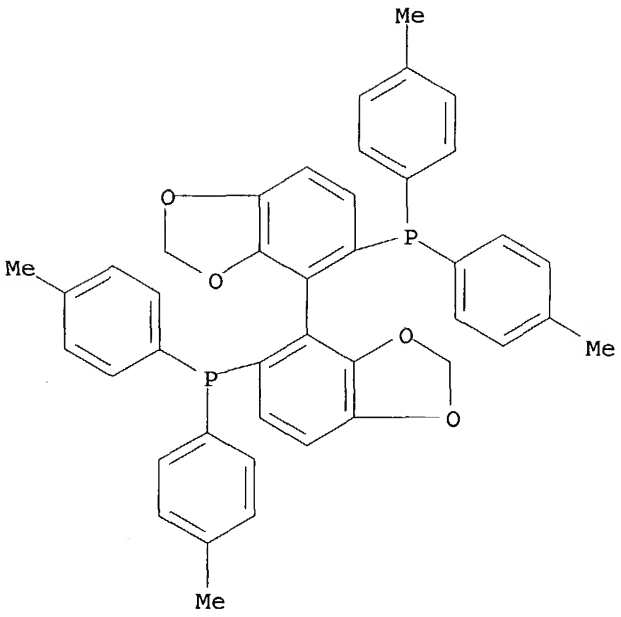
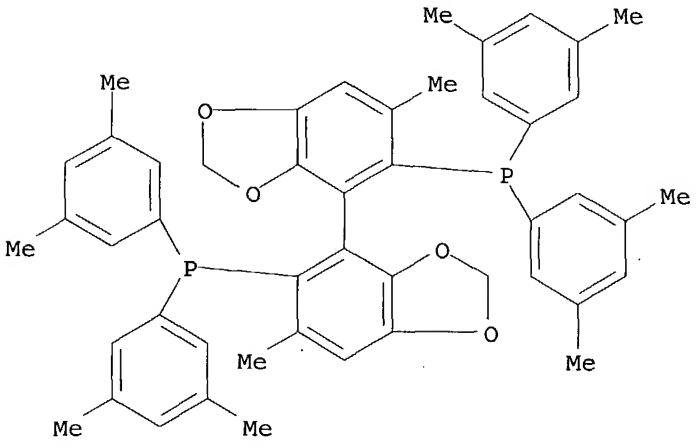
MF C42 H36 O4 P2



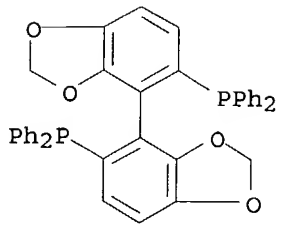
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L4 21 ANSWERS REGISTRY COPYRIGHT 2003 ACS
IN Phosphine, [(4R)-6,6'-dimethyl[4,4'-bi-1,3-benzodioxole]-5,5'-diyl]bis[bis(3,5-dimethylphenyl)- (9CI)
MF C48 H48 O4 P2



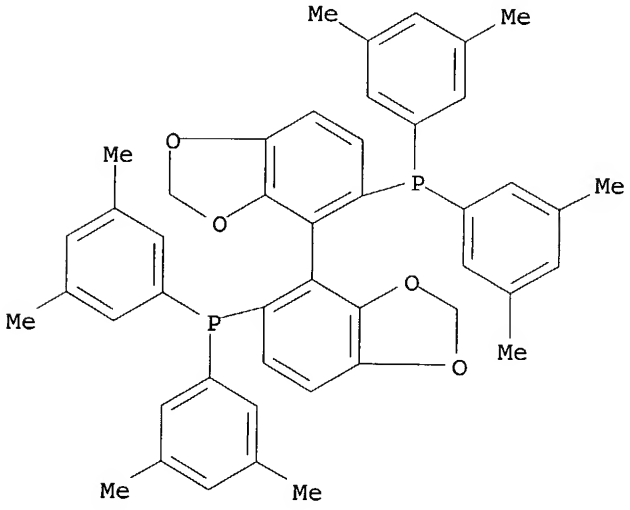
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L4 21 ANSWERS REGISTRY COPYRIGHT 2003 ACS
IN Phosphine, [4,4'-bi-1,3-benzodioxole]-5,5'-diylbis[diphenyl- (9CI)
MF C38 H28 O4 P2



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

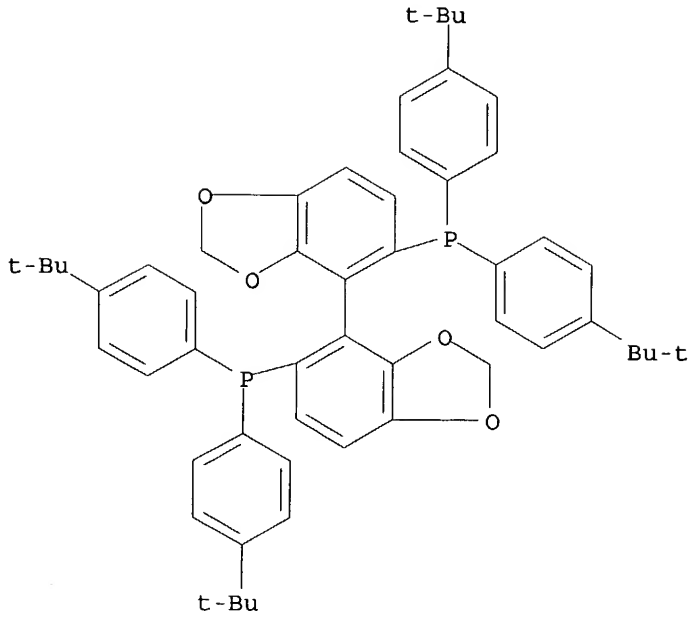
L4 21 ANSWERS REGISTRY COPYRIGHT 2003 ACS
IN Phosphine, [(4S)-[4,4'-bi-1,3-benzodioxole]-5,5'-diyl]bis[bis(3,5-dimethylphenyl)- (9CI)
MF C46 H44 O4 P2



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

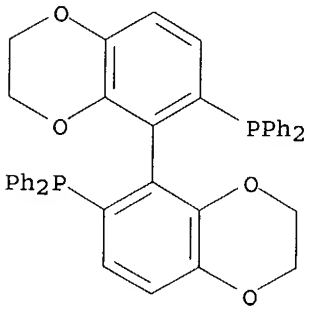
HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):10

L4 21 ANSWERS REGISTRY COPYRIGHT 2003 ACS
IN Phosphine, [4,4'-bi-1,3-benzodioxole]-5,5'-diylbis[bis[4-(1,1-dimethylethyl)phenyl]-, (+)- (9CI)
MF C54 H60 O4 P2



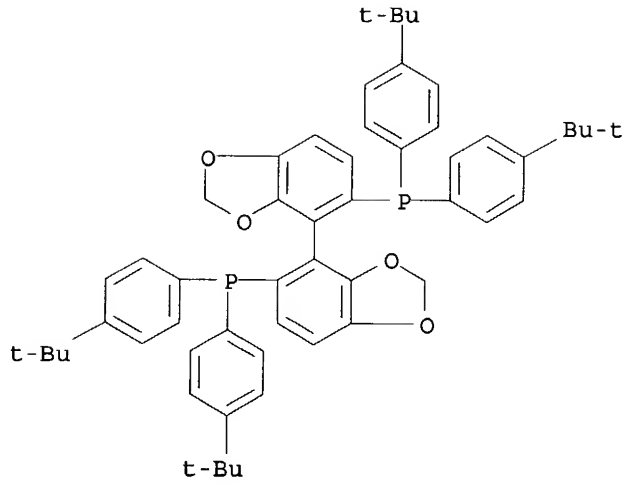
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L4 21 ANSWERS REGISTRY COPYRIGHT 2003 ACS
IN Phosphine, [(5R)-2,2',3,3'-tetrahydro[5,5'-bi-1,4-benzodioxin]-6,6'-diyl]bis[diphenyl- (9CI)
MF C40 H32 O4 P2



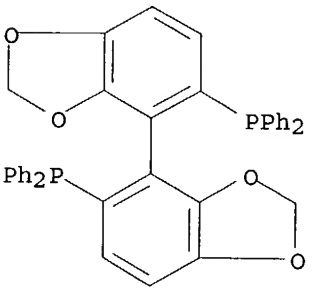
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L4 21 ANSWERS REGISTRY COPYRIGHT 2003 ACS
IN Phosphine, [4,4'-bi-1,3-benzodioxole]-5,5'-diylbis[bis[4-(1,1-dimethylethyl)phenyl]- (9CI)
MF C54 H60 O4 P2



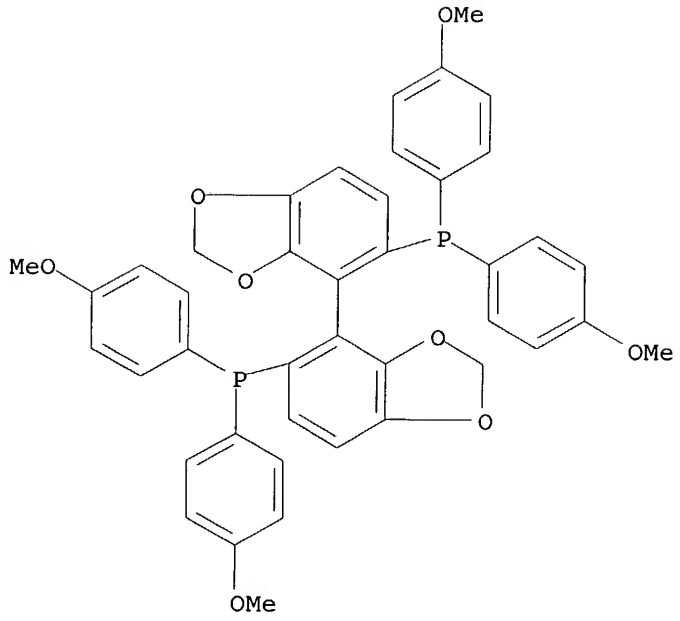
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L4 21 ANSWERS REGISTRY COPYRIGHT 2003 ACS
IN Phosphine, [(4R)-[4,4'-bi-1,3-benzodioxole]-5,5'-diyl]bis[diphenyl- (9CI)
MF C38 H28 O4 P2



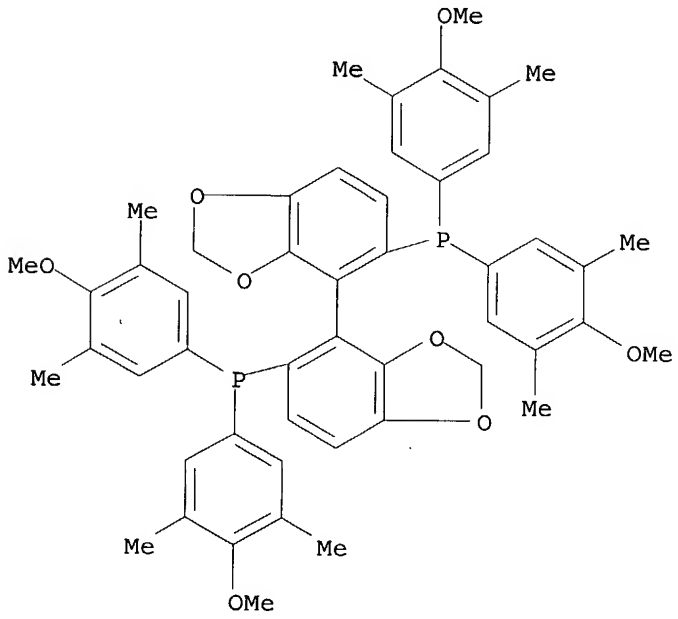
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L4 21 ANSWERS REGISTRY COPYRIGHT 2003 ACS
IN Phosphine, [(4S)-[4,4'-bi-1,3-benzodioxole]-5,5'-diyl]bis[bis(4-methoxyphenyl)- (9CI)
MF C42 H36 O8 P2



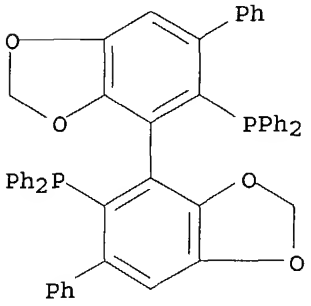
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L4 21 ANSWERS REGISTRY COPYRIGHT 2003 ACS
IN Phosphine, [(4S)-[4,4'-bi-1,3-benzodioxole]-5,5'-diyl]bis[bis(4-methoxy-3,5-dimethylphenyl)- (9CI)
MF C50 H52 O8 P2



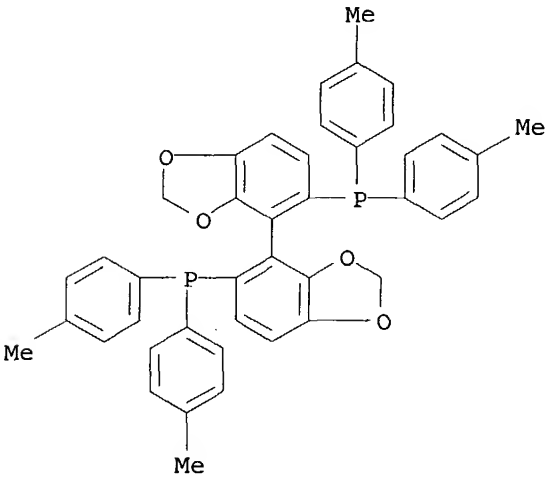
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L4 21 ANSWERS REGISTRY COPYRIGHT 2003 ACS
IN Phosphine, [(4R)-6,6'-diphenyl[4,4'-bi-1,3-benzodioxole]-5,5'-diyl]bis[diphenyl- (9CI)
MF C50 H36 O4 P2



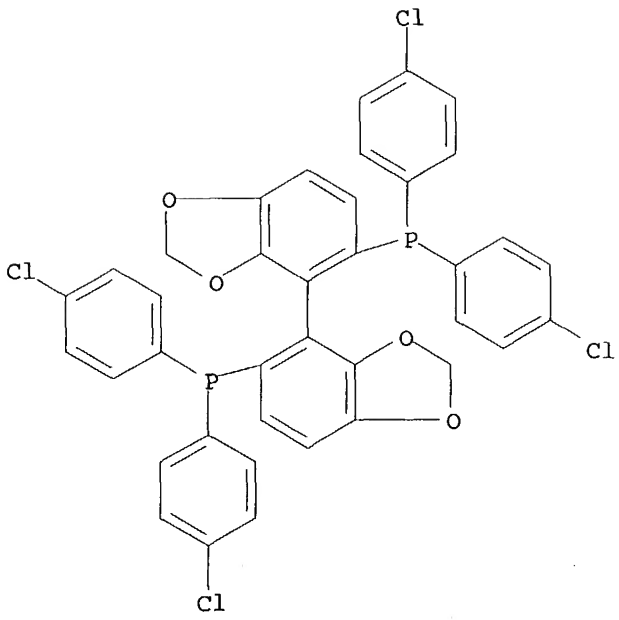
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L4 21 ANSWERS REGISTRY COPYRIGHT 2003 ACS
IN Phosphine, [4,4'-bi-1,3-benzodioxole]-5,5'-diylbis[bis(4-methylphenyl)-(9CI)
MF C42 H36 O4 P2



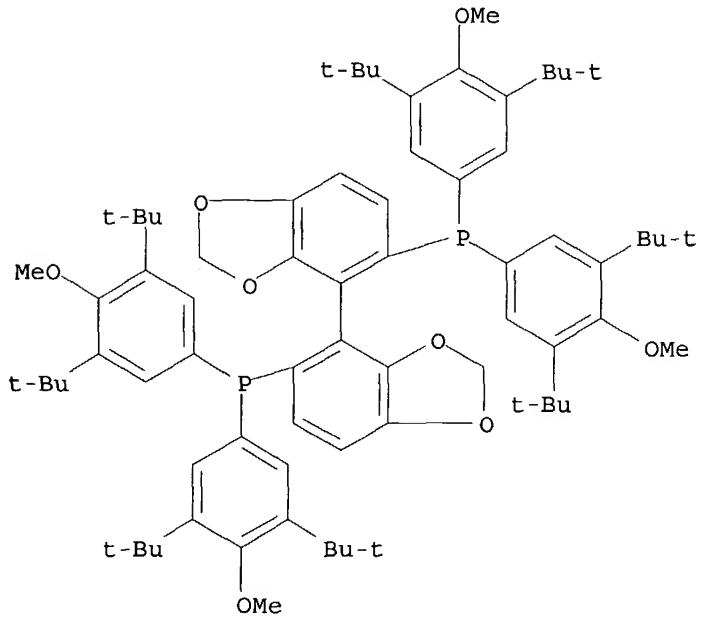
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L4 21 ANSWERS REGISTRY COPYRIGHT 2003 ACS
IN Phosphine, [4,4'-bi-1,3-benzodioxole]-5,5'-diylbis[bis(4-chlorophenyl)-, (+)- (9CI)
MF C38 H24 Cl4 O4 P2



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L4 21 ANSWERS REGISTRY COPYRIGHT 2003 ACS
IN Phosphine, [(4S)-[4,4'-bi-1,3-benzodioxole]-5,5'-diyl]bis[bis[3,5-bis(1,1-dimethylethyl)-4-methoxyphenyl]- (9CI)
MF C74 H100 O8 P2



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT